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Journal of the Asiatic
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JOURNAL
OF THE
ASIATIC SOCIETY
OF
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BENGAL.

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VOL. XII.
PART II.—JULY TO DECEMBER, 1843.
NEW SERIES.

"It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science, in different parts of *Asia* will commit their observations to writing, and send them to the Asiatic Society, in Calcutta; it will languish, if such communications shall be long intermitted; and will die away if they shall entirely cease."—SIR WM. JONES.

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Contents.

PART II.

No. 139.

	<i>Page.</i>
I.—Report of a Visit to the Pakchan River, and of some Tin localities in the southern portion of the Tenasserim Provinces. By Capt. G. B. Tremenebeere, F. G. S. Executive Engineer, Tenasserim Provinces. With a Map and Section of the Peninsula,	523
II.—Memoir on the application of Asphaltic Mastic to Flooring, Roofing, and Hydraulic works in India. By Capt. Goodwyn, Engineers. With a plate, ..	534
III.—Contributions towards a History of the Development of the Mineral Resources of India. By S. G. Tollemache Esq.,	542
IV.—Journal of a Tour through parts of the Panjab and Affghanistan, in the year 1837. By Agha Abbas of Shiraz, arranged and translated by Major R. Leech, by whom the tour was planned, and instructions furnished. From the Secretariat of the Government of India,	564
V.—Proceedings of the Asiatic Society,	622

No. 140.

I.—Report on the Manners, Customs and Superstitions of the People of Shoa, and on the History of the Abyssinian Church. By Capt. Graham, B. A. From the Secretariat of the Government of India,	625
II.—Proceedings of the Asiatic Society,	729

No. 141.

I.—As-Soyûti's work on Earthquakes, called كشف الصلصلة عن وصف الزلّة للسيوطي Kashf-as-Salsalah 'an wasf Az-zal-zalah, i. e. removing the noise from the description of the Earthquakes, (or clearing up the description of Earthquakes.) Translated from the Arabic by A. Sprenger, Esq. B. M. S.	741
II.—A general Statement of the Weather at Kotgurh and Soobathoo, for 1819-20-21. By Captain Patrick Gerard,	749
III.—Meteorological Register kept at Kathmandoo, Valley of Nepal. By Captain G. H. Robinson, for the month of March 1834,	768
IV.—Supplementary Note to Mr. Commissioner Lushington's Report on the Copper Mines of Kemaon and Ghurwal, Journal, p. 472,	769
V.—Note on a Fossil Antelope, from the Dadoopoor Museum. By Captain W. E. Baker, Bengal Engineers,	769
VI.—A Ninth Memoir on the Law of Storms in India; being the Pooree and Cuttack Storms of 2nd, and the Gya and Patna Storms of the 5th and 6th October, 1842. By Henry Piddington,	771
VII.—Notes on a curious species of Tiger or Jauguar, killed near the Snowy Range, north of Darjeeling. By Lieut. Tickell, Bengal Native Infantry, Assistant Agent to the Governor General, S. W. Frontier,	814

VIII.—M. Stanislas Julien on the Study of the Chinese Language. Translated for the Journal of the Asiatic Society. By Henry Piddington, Sub-Secretary, Asiatic Society,	816
IX.—Proceedings of the Asiatic Society,	821

No. 142.

I.—Tables of Comparative Philology, shewing specimens of the affinity of the Greek, Latin and English Languages, with the Sanskrit, Persian, Russian, Gaelic, Welsh, Lithuanian, German, Hebrew, and Anglo-Saxon. By the Rev. James Long,	837
II.—On a new species of Cervus (Cervus Dimorphé.) By B. H. Hodgson, Esq. Resident, Kathmandoo. With a Plate,	897
III.—Note on the "Flata Limbata," and the White Wax of China. By Captain Thomas Hutton, B. N. I.	898
IV.—Qualitative Examination of the Native Copper found on Round Island in the Cheduba group, South-East of Ramree, and forwarded to the Society by Captain Campbell, See Proceedings Asiatic Society for April 1843. By S. Mornay, Esq..... .. .	904
V.—Memoranda of Earthquakes and other remarkable Occurrences in Upper Assam, from January 1839 to September 1843. By Captain Hannay, B. N. I. .. .	907
VI.—Memorandum of various Phænomena in 1843. By the Rev. N. Brown, Missionary, Assam,	909
VII.—Proceedings of the Asiatic Society,	910

No. 143.

I.—Mr. Blyth's Monthly Report for December Meeting, 1842, with Addenda subsequently appended,	925
II.—Note on the Flata limbata, p. 898 et seq., ante... .. .	1011
III.—Proceedings of the Asiatic Society,	1012

No. 144.

I.—Memoir on Indian Earthquakes. By Lieut. R. Baird Smith, Bengal Engineers,.. .. .	1029
II.—Comparative Tables of the Law of Mortality, the Expectation of Life, and the Values of Annuities in India and England. By Captain J. C. Hannington, 24th N. I. 1st Assistant G. G. A. Maunbloom,	1057
III.—Experiments and Papers principally by W. B. O'Shaughnessy, Esq. B. M. S. relating to the effects of Sea-water on Iron. Communicated by the Government of Bengal,	1066
IV.—Notes on, and a short Vocabulary of, the Hinduvee Dialect of Bundelkhand. By Major R. Leech, c. B. Political Agent. From the Political Secretariat of the Government of India.	1085
V.—A Note on the Winds, as influencing the Tracks sailed by Bermuda Vessels; and on the advantage which may be derived from sailing on Curved Courses when meeting with Revolving Winds by Lt. Col. Reid, Governor of Bermuda. .. .	1104
VI.—Proceedings of the Asiatic Society,	1107

Index

TO PART II, VOL. XII.

<i>Page.</i>	<i>Page.</i>
Asphaltic Mastic to Flooring, Roofing, and Hydraulic works in India. Memoir on the application of. By Capt. Goodwyn, 534	M. Stanislas Julien on the study of the Chinese Language. Translated for the Journal of the Asiatic Society. By Henry Piddington, 816
As-Soyûti's on Earthquakes. Translated from the Arabic, by A. Sprenger, Esq. 741	Manners, Customs and Superstitions of the People of Shoa, and on the History of the Abyssinian Church. Report on the. By Capt. Graham, 625
Cervus. Cervus Dimorphé. On a new species of. By B. H. Hodgson, with a Plate. 897	Meteorological Register kept at Kathmandoo. By Captain G. H. Robinson, 768
Comparative Philology, shewing specimens of the affinity of the Greek, Latin and English Languages with the Sanskrit, Persian, Russian, Gaelic, Welsh, Lithuanian, German, Hebrew, and Anglo-Saxon. Tables of. By the Rev. James Long, 837	Monthly Report for December Meeting, 1842, with Addenda subsequently appended. By Mr. Blyth. 925
Copper Mines of Kemaon and Ghurwal. Supplementary Notes to Mr. Commissioner Lushington's Report on the. Journal, p. 472, .. 769	Native Copper. Qualitative Examination of the, found on Round Island in the Cheduba group, South East of Ramree, and forwarded to the Society by Captain Campbell, See Proceedings Asiatic Society for April 1843. By S. Mornay, Esq... .. 904
Corrosion of Iron by Salt-Water, &c. &c. 1066	Phænomena in 1843. Memorandum of various. By the Rev. N. Brown, 909
Earthquakes and other remarkable Occurrences in Upper Assam, from January 1839 to September 1843. Memoranda of. By Capt. Hannay, 907	Proceedings of the Asiatic Society, .. 622, 729, 821, 910, 1012-1107
Flata limbata. Note on the, p. 898 et seq. 1011	Tiger or Jaguar, killed near the Snowy Range, north of Darjeeling. Notes on a curious species of. By Lieut. Tickell, 814
Fossil Antelope, from Dadoopoor Museum. Note on a. By Captain W. E. Baker, 769	Tour through parts of the Panjab and Afghanistan in the year 1837. Journal of a. By Agha Abbas of Shiraz, arranged and translated by Major R. Leech, 564
Hinduvee Dialect of Bundelkhand. short Vocabulary of the. By Major R. Leech, 1086	Tracks sailed by Bermuda Vessels. A note on the Winds, as influencing the. By Lt. Col. Reid, .. 1104
History of the Developement of the Mineral Resources of India. Contribution towards a. By S. G. Tollemache Heatly, Esq. 542	Visit to the Pakchan River, and of some Tin localities in the southern portion of the Tenasserim Provinces. Report of a. By Capt. G. B. Tremeneere, 523
Indian Earthquakes, Memoir on. By Lieut. R. Baird Smith. 1029	Weather at Kotguruh and Soobathoo, for 1819-20-21. A general Statement of the. By Captain Patrick Gerard, 749
Law of Mortality, the Expectation of Life, and the Values of Annuities in India and England. Comparative Tables of the. By Captain J. C. Hannington, 1056	White Wax of China. "Flata Limbata." Note on the. By Captain Thomas Hutton, 898
Law of Storms in India. A Ninth Memoir on the. Being the Pooree and Cuttack Storms of 2nd, and the Gya and Patna Storms of the 5th and 6th October, 1842. By Henry Piddington, 771	

INDEX TO NAMES OF CONTRIBUTORS

TO PART II, VOL. XII.

	Page.		Page.
BAKER, W. E. Captain. Note on a Fossil Antelope, from the Dadoo-poor Museum,	769	Gaelic, Welsh, Lithuanian, German, Hebrew, and Anglo-Saxon, .	837
BLYTH, Mr. Monthly Report for December Meeting, 1842, with Addenda subsequently appended, ..	925	LUSHINGTON, Mr. Commissioner. Supplementary Note to Report on the Copper Mines of Kemaon and Ghurwal,	769
BROWN, N. Rev. Memorandum of various Phænomena in Assam 1843,	909	MORNEY, S. Esq. Qualitative Examination of the Native Copper found on Round Island in the Cheduba group, South East of Ramree, and forwarded to the Society,	904
GERARD, PATRICK, Captain. A general Statement of the Weather at Kotgurh and Soobathoo, for 1819-20-21,	749	Note on the Flata limbata, p. 898 et seq., ante,	1011
GOODWYN, Capt. Memoir on the application of Asphaltic Mastic to Flooring, Roofing, and Hydraulic works in India,	534	O'SHAUGHNESSY, W. B. Esq. Experiments and Papers principally, relating to the effects of Sea-water on Iron,	1066
GRAHAM, B. A. Captain. Report on the Manners, Customs and Superstitions of the people of Shoa, and on the History of the Abyssinian Church,	625	PIDDINGTON, HENRY. A Ninth Memoir on the Law of Storms in India; being the Pooree and Cut-tack Storms of 2nd, and the Gya and Patna Storms of 5th and 6th October, 1842,	771
HANNAY, Captain. Memoranda of Earthquakes and other remarkable Occurrences in Upper Assam, ..	907	M Stanislas Julien on the study of the Chinese Language. Translated for the Journal of the Asiatic Society, ..	816
HANNYNGTON, J. C. Captain. Comparative Tables of the Law of Mortality, the Expectation of Life, and the Values of Annuities in India and England,	1057	Proceedings of the Asiatic Society, 622-729-821-910-1012-1107	
HEATLY, S. G. TOLLEMACHE, Esq. Contributions towards a History of the Development of the Mineral Resources of India,	542	REID, Lt. Col. A note on the Winds, as influencing the Tracks sailed by Bermuda Vessels; and on the advantage which may be derived from sailing on Curved Courses when meeting with Revolving Winds, ..	1104
HODGSON, B. H. Esq. On a new species of Cervus, Cervus Dimorphé,	897	ROBINSON, G. H. Captain. Meteorological Register kept at Kathmandoo,	768
HUTTON, THOMAS, Captain. Note on the "Flata Limbata," and the White Wax of China,	898	SPRENGER, A. Esq. As-Soyûti's work on Earthquakes,	741
LEECH, R. Major. Journal of a Tour through parts of the Panjab and Afghanistan, in the year 1837. By Agha Abbas of Shiraz, ..	564	SMITH BAIRD, R. Lieut. Memoir on Indian Earthquakes.	1029
Notes on, and a short Vocabulary of, the Hinduvee Dialect of Bundelkhand,	1086	TICKELL, Lieut. Notes on a curious species of Tiger or Jaguar, killed near the Snowy Range, north of Darjeeling,	814
LONG, JAMES, Rev. Tables of Comparative Philology, shewing specimens of the affinity of the Greek, Latin and English Languages, with the Sanskrit, Persian, Russian,		TREMENHEERE, G. B. Capt. Report of a Visit to the Pakchan River, and of some Tin localities in the southern portion of the Tenasserim Provinces,	523

LIST OF PLATES

To Vol. XII. Journal Asiatic Society.

No.		Facing Page.
1.	Map of the Route from Sukkur to Dadur and Kahun in the Murree country. By Lieut. Postans,	41
2.	<div> <div> Inscription in the original Cufic upon the gates of Somnath, and By Lieut. Thomas Studdart, A drawing of the gates of Somnath to accompany a Committee Report </div> <div> A sketch of the Marble Tomb of Sultan Mahmud. By Lieut. Thomas Studdart, </div> <div> A Plate of 3 Stars—No. 1, top star on the left leaf; No. 3, 2d from the top on the 2d leaf from the left; No. 5, 2d from the top on the right leaf, </div> </div>	76
3.	Oonta Dhoora looking south from the ridge above Chingno, <i>i. e.</i> the crests of Kalee Muttee Chinhaie. By Lieut. J. A. Weller,	100
4.	Perpetual Moon Table. By Capt. Robert Shortreede,	108
5.	Cymindinæ <i>Heterophus mihi</i> , <i>H. Pernigra mihi</i> , and inside of foot, size of nature. By B. H. Hodgson, Esq.	128
6.	Sandstone Cliffs at Maree. Dr. Jameson's report on the Geology of the Punjaub,	220
7.	Companion to the Perpetual Moon Table. By Capt. R. Shortreede,	234
8.	<div> Chart to the Eighth Memoir on the Law of Storms in India; being the track of the Madras Hurricane of 24th October 1842, over the Peninsula of India and in the Arabian Sea. By H. Piddington, Esq., </div> <div> No. II. Chart to the Eighth Memoir. <i>do. do.</i>, </div>	398
9.	Four Plates of the Genus <i>Paussus</i> . By Capt. W. J. E. Boyes,	436
10.	Ravenshaw's Portable Meridian and Universal Noon Dial,	442
11.	Sketch of a Route across the Isthmus of Kraa and of some Tin localities near the southern boundary of the Tenasserim Provinces. By Capt. G. B. Tremenheere,	532
12.	Cauldron and instruments used in laying Asphalte Floors. By Capt. Goodwyn, B. E.	540
13.	Fossil Antelope from the Sub-Himalayas. By Capt. W. E. Baker,	770
14.	Chart to the Ninth Memoir on the Law of Storms in India; being the Pooree Hurricane of 2d and 5th of October 1842. By H. Piddington, Esq.	812
15.	Curious species of Tiger or Jaguar, killed near the Snowy Range, north of Darjeeling. By Lieut. S. R. Tickell,	
16.	<i>Cervus Dimorphé mihi</i> , Hab. Saul Forests 3d year. By B. H. Hodgson, Esq.	897
17.	<div> Indicator <i>Xanthonotus</i>, Blyth, natural size, </div> <div> <i>Xiphorhamplus superciliaris</i>, Blyth, ditto ditto, </div> <div> <i>Paradoxornis ruficeps</i>, Blyth, ditto ditto, </div> <div> <i>Cinclidium Frontale</i>, Blyth, ditto ditto, </div>	1010

JOURNAL

OF THE

ASIATIC SOCIETY.

*Mr. Blyth's monthly Report for December Meeting, 1842, with
Addenda subsequently appended.**

SIR,—The following donations have been received since our last Meeting :—

1. From the Barrackpore establishment.

A fine old male of the Wandaroo Monkey (*Macacus Silenus*). The skin has been mounted, and the skeleton also set up.

A recent example of the *Rhizomys badius*, Hodgson, received from Arracan. This animal entirely accords with Mr. Hodgson's description in *Calc. Jour. Nat. Hist.* No. V, 60: and I have also had both its skin and skeleton set up.

Also a recent example of what I am assured is the Sikim breed of long-haired domestic Goat, being (if I remember rightly) the same as that erroneously figured by Mons. F. Cuvier as the Kashmir or Shawl Goat, and nearly similar to the mixed race produced between the latter and the Angora Goat. In our present specimen, the hair is excessively copious, as fine as that of the human head, and straight; being comparatively short on the fore-quarters, where it does not exceed five inches in length; on the back it averages nine inches; and on the

* The lateness of the appearance of this and subsequent monthly Reports due up to the present time, is owing to the circumstance of my having been too much occupied at the time the arrears of the Journal were brought up, to pass them severally under review prior to their being laid before the public, for the purpose of incorporating what additional information I had received bearing on the subjects treated of, and which it was desirable should be brought forward upon the same occasion.—E. B.

sides and rump it exceeds twelve inches, the quantity on these parts being truly enormous, and hanging in dense flakes more or less matted, which contain large felted masses of the cast inner *poshm*, that it would not be possible to separate as now entangled (though, by attention to combing these animals at the season of shedding the *poshm*, I presume this might be removed, and the value of the fine long hair thus enhanced, while the *poshm* would also be available for œconomic purposes). The true Shawl Goat, as is now well known, is not a long-haired race, but has a rigid tubular coat resembling that of the wild *Ægagrus*, or of the true Stags, &c., only of twice the ordinary length, beneath which is the very abundant supply of *poshm*, or fine silky wool, of which the Kashmir stuffs are manufactured; while the Angora breed is quite devoid of the *poshm*, having only silky hairs of one quality, which hang in elegant ringlets to a remarkable length.

Also a recent Himalayan Chicore (*Perdix chukar*).

2. From Mr. DeCruz, of the Botanic Garden, an unusually fine specimen of *Paradoxurus typus*, which has been mounted.

3. From Dr. McClelland, a recent example of *Ierax melanoleucos*, Nobis, *ante*, p. 179 (*bis*), from Assam.

4. From Mr. F. Harris, a specimen of an Albatross pertaining to a species new to the museum, being probably the *Diomedea melanophris*, Tem. *Col.* 456, thus briefly described in Griffith's Work, VIII, 572, which is the only account I can find of it in the library of the Society. "Beak, wings, tail, and streak through the eye, black; the rest dirty-white." The specimen before me is under three feet in length, closed wing twenty inches, tail nine inches, bill to forehead (in a straight line) four inches and a half, and middle toe and claw nine inches. Head, neck, and under-parts, with the rump, white, but little sullied, and merely a faint trace of a dark streak through the eye: mantle, wings, and tail, black, tinged with ashy; and some unmoulted brown coverts on the wings: bill pale yellowish, the extremities of both mandibles dusky, except the extreme tips, which are whitish; and feet apparently have been cinereous.*

* Another specimen of this Albatross has lately been presented to the Society by Mr. R. Macdonald Stephenson: it merely differs in having the beak suffused throughout with dusky, and the hind-neck with smoky-grey; being probably a female.

Daption Capensis.

5. From Mr. J. Stalkart, a large living specimen of *Varanus bino-tatus*.

6. From M. Claude Queiros, a small specimen of a Flying Fish (*Dactylopterus orientalis*), caught off the Cape.

7. From W. H. Benson, Esq., Moradabad, three species of Shells transmitted by letter in a quill; viz.

Triarta montana, Benson; four specimens, from the Bhountal Lake, Kemaon.

Planorbis calathus, Benson; six specimens, Moradabad.

Cyclostoma strangulatum, Hutton; four specimens, Landour.

8. From R. Ince Esq., Superintendent of Salt Chokees, Zillah Backergunge, three bottles containing—

Specimens of a *Gryllus*, very destructive to young vegetables, and which abounds in the Society's compound.

One of an *Acanthodis*, which I have also obtained in the Calcutta Botanic Garden: and

Two specimens of the small Moonah Worm, which Mr. Ince found considerable difficulty in procuring. This Worm is of a very different species from that described in *J. A. S.* XI, 601; having no mandibles that should enable it to perforate wood. It measures from three to four inches in length, and is furnished with a suctorial mouth, the circular lip of which is studded externally with small cones of a dark colour, and forms on its upper portion a pair of tubercles having each four similar cones, between and above which tubercles are four other cones of the same kind: this lip is surmounted by a mask having three divisions, the central of which is furnished with a very distinct pair of eyes situate near the first ring of the body, and laterally to each eye are placed four small branchial laminæ. The rings of the body are very numerous, and are each furnished with a lateral wide lamina, bearing three packets of bristles appearing like fins; and on the upper side of each lamina is a dark spot. Colour, as appearing in spirits, light brown.

The Collector sent by the Society to Darjeeling has returned, with examples of the following species, of which those new to the museum are marked with an asterisk.

Mammalia.

Ursus labiatus : a skeleton.

* *Talpa cryptura*, Nobis : a skin, and a specimen in spirits.

* *Sorex aterrimus*, Nobis : an adult male, and a young one, both in spirits. (This and the preceding species will be described in a monograph of Indian *Talpidæ*).

Sciurus bicolor, Sparrman.

Sciuropterus Turnbullii (?), Gray, *P. Z. S.* 1837, p. 67; *Mag. Nat. Hist. n. s.*, I, 584. From recollection of the British Museum specimen on which this name was founded, I strongly incline to the opinion that I have assigned this correctly, but have elsewhere given a description of some Darjeeling specimens, which are inferior in dimensions to those ascribed to *Sc. Turnbullii* by Mr. Gray.†

AVES.

Falco tinnunculus.

Accipiter nisosimilis, Tickell, *J. A. S.* II, 571.

Athene Brodiei; *Noctua Brodiei*, Burton, *P. Z. S.* 1835, p. 152; *N. tubiger*, Hodgson, *As. Res.* XIX, 175.

Upupa epops.

Bucco grandis ; three specimens.

—— *Franklinii*, Nobis, *J. A. S.* XI, 167.

Picus (Gecinus) Nipalensis, Hardwicke and Gray; doubtfully cited *P. mentalis*, apud Jerdon.

P. (Dendrocopus) Himalayanus, Jardine and Selby : two males.

Cuculus canorus : young of both sexes.

—— *micropterus*, Gould : female.

† From the same locality, the Society has lately been presented, by Mrs. Oakes, with a fine specimen of *Sciuropterus caniceps*, Gray, *Ann. and Mag. Nat. Hist.* 1842, p. 262; one of *Sciurus lokriah*, Hodgson, *J. A. S.* V, 232; and one of *Sc. McClellandii*, Horsfield, *P. Z. S.* 1839, p. 151, to which species must be referred *Sc. Pembertonii*, Nobis, *J. A. S.* XI, 887. This little Himalayan Squirrel is represented on the Neilgherries by *Sc. Delesserti*, Is. Geoff., and in the Malay countries by *Sc. insignis*, Horsfield, and I believe others. By E. B. Ryan Esq., the Society has been presented with a Darjeeling specimen (at least the skin was purchased there) of *Felis macrocelis*, which species has since been sent from Nepál by Mr. Hodgson. Vide *J. A. S.* XI, 275. These two specimens vary much in ground-tint, inclining respectively to grey and to fulvous; but their markings are very similar.

* *Cuculus poliocephalus*, Latham, v. *Himalayanus*, Vigors and Gould : female.

Corvus macrorhynchos, Vieillot, v. *culminatus*, Sykes : sent as the Raven of Darjeeling.

Crypsirina Sinensis.

* ——— *altirostris*, Nobis, n. s., adult and young. Described in the sequel.

Keropia striata ; *Garrulus striatus*, Vigors.

Garrulax chrysopterus ; *Ianthocincla chrysoptera*, Gould.

———— *albugularis* ; *I. albugularis*, Gould : *Cinclosoma albigula*, Hodgson.

Ixops Nipalensis, Hodgson : *Cinclosoma Nipalense*, and subsequently *Alcopus* (olim *Sibia*) *Nipalensis*, of the same naturalist : six specimens.

Heterornis (olim *Cutia*) *Nipalensis*, Hodgson : six specimens.

* *Pteruthius rufiventer*, Nobis, *J. A. S. XI*, 183, two males.

———— *erythropterus* ; *Lanius erythropterus*, Vigors and Gould.

Leiothrix cyanoptera ; vide *XI*, 184.

———— *strigula*.

———— *castaniceps*.

Parus monticolus, adult and young.

Certhia Himalayana.

Sitta Nipalensis, Hodgson.

* *Temnoris* (olim *Suthora*) *Nipalensis*, Hodgson.

* *Prosorinia* (olim *Cochoa*) *purpurea*, Hodgson.

* *Xiphoramphus superciliaris*, Nobis, *J. A. S. XI*, 176.

* *Cinclidium frontale*, Nobis, *J. A. S. XI*, 181.

Calliope (?) *cruralis*, Nobis, n. s. Described in the sequel.

Ænicura maculata.

* *Zoothera monticola*, Vigors and Gould ; three adults, and a young one.

Turdus (*Merula*) *pæcilopectera*.

T. (*Geocichla*) *citrina*.

T. (*Petrocincla*) *affinis*, Nobis, ante, p. 177 (*bis*).

T. (*Petrocincla*) *erythrogastra*, Vigors and Gould. *N. B.* The sexes of this species differ remarkably in their first or nestling plumage, the young males having the wings and tail blue, as in the adult males, while in the females of all ages these are brown ; besides which, the

mottled clothing plumage of the young males has the same fulvous ground-colour as the under-parts of the adult females, this being whitish in the young females, contrasting greatly with the corresponding garb of the other sex.

**Chaitaris* (Hodgson) *grandis*, Nobis, *J. A. S.* XI, 189; two males and a female.

Ch. sundara, Hodgson.

Saxicola caprata; female.

**Rhipidura hypoxantha*, Nobis, *n. s.* Described in the Sequel. (Genus *Chelidorhynx*, Hodgson.)

Anthus agilis (?).

Alcurus (Hodgson) *striatus*; *Tricophorus striatus*, Nobis, XI, 184.

Dicrurus macrocircus, Vieillot.

Coccothraustes melanoxanthus, Hodgson.

**Corythus* (?) *Sepahi*, Hodgson, *As. Res.* XIX, 151; a male and a female. The minute subdivisions among the *Fringillidæ* are almost endless, and many grade and pass insensibly into each other: but this gorgeous species is certainly out of place in the form typified by *C. enucleator*, whilst the other species described by Mr. Hodgson on the same occasion by the term *C. subhemalayanus* [which the Society has also since received from Darjeeling] is a true *Corythus* in its plumage, but a *Pyrrhula* in its beak. The present bird is more allied to some of the *Erythospizæ* of Bonaparte, but is distinguished from them by its larger size and more tumid bill. It is occasionally procured by the Calcutta bird-dealers.

Erythrospiza (?) *rosea*.

Corypha (?) *baghaira*.

Treron sphenurus.

Columba (*Macropygia*) *tusalia*. Described in the sequel.

REPTILIA.

Three species of Snakes, one of them allied to the European *Natrix torquata*: and

Hyla obtusa, Nobis. A Tree Frog distinguished from the common *H. maculata* of Bengal by its nearly uniform dark colour and more obtuse muzzle; the back is also considerably broader, and the loins are less contracted. The skin of the entire under-parts is perfectly

smooth, instead of being minutely tuberculated as in *H. maculata*. The limbs also are proportionately much larger and stronger. Colour of the specimen preserved in spirits dark livid brown, with a broad lateral black band commencing at the nostril, continued beyond the eye, and becoming less distinct after passing the fore-leg; sides of the abdomen, and the thigh, a little mottled or speckled, and the fore-limbs and legs obscurely banded with livid black: beneath pale and spotless. Length from muzzle to vent two inches and one-eighth, and breadth behind the eyes seven-eighths of an inch, of the loins half an inch; anterior limb to end of longest toe an inch and a half, and hind limb ditto four inches and a half: eyes large and prominent.

PISCES.

Pimelodus nangra, Buch. Hamilton.

Pimelodus — ? Young.

Cyprinus cotus, Buch. Ham.

Gobio isurus, McClelland.

Silurus — ? Young.

Solea isostoma, McClelland, M.S.

MOLLUSCA.

Three species of Shells, undetermined.

CRUSTACEA.

One large species of *Oniscus*, which also occurs on the Neilgherries.

ARACHNIDA.

Two or three Spiders, one of large size, which I have somewhere seen figured, and which is common here during the cool season, and also inhabits the forests of Malabar.

INSECTA.

A considerable collection, almost entirely consisting of *Lepidoptera*, *Coleoptera*, and a moderate number of *Hemiptera*. Among the first, is the celebrated Purple Emperor Butterfly of Europe (*Apatura iris*), and various other European species, as *Doritis Apollo*, *Rhodocera v. Goncptyx rhamni*, the cosmopolite *Cynthia cardui* (which I have also procured near Calcutta, and have specimens from Afghanistan

and from Swan River (!), *Papilio Machaon* (very small, as are all the Himalayan examples which I have seen), and some of the more rare Himalayan species, several of which I have made out from the excellent work of M. Boisduval in the *Suites à Buffon*.

The new species of birds from Darjeeling are as follow :—

Crypsirina (Vieillot) *altirostris*, Nobis: genus *Phrenotrix*, Horsfield; *Dendrocitta*, Gould. Nearly allied to the Assamese *D. frontalis* (McClelland and Horsfield), with which it would appear to form a particular section of the group, characterized by having the bill shorter, but much more compressed and deeper, than in the others;—being in fact absolutely that of *Glaucoptis*, so far as I can remember the latter. Length fifteen inches, of which the tail measures nine inches and a quarter, the penultimate feather being two inches shorter, and the outermost six inches and a half shorter; of wing five inches and one-eighth; of bill to forehead (through the feathers) an inch, and five-eighths of an inch deep; tarse an inch: claws remarkably long, that of the hind-toe five-eighths of an inch, measured in a straight line. The head (including the vertex, but not the occiput), ear-coverts, throat, and fore-neck (to the breast), are deep black; wings and tail also black, the coverts of the former, excepting those of the primaries, pure ash-grey; the occiput and remainder of the neck, together with the breast and belly, whitish-grey; the back, scapularies, upper and lower tail-coverts, vent and flanks, bright ferruginous (as in *Cr. vagabunda*); tibial feathers mingled grey and rufous: bill and feet black. Young similar in markings, but all the colours, excepting the black and ferruginous, much duller; the plumage of flimsy texture.

This is the sixth species of its genus now ascertained to inhabit India or its immediate confines, besides the *Phrenotrix temia*, Horsfield, which Dr. Helfer asserts is met with in the Tenasserim provinces. The others are as follow :—

1. *Cr. vagabunda*; *Coracias vagabunda*, Latham: figured in Gould's *Century*. Everywhere abundant, I believe, throughout India, and in the Tenasserim provinces.

2. *Cr. Sinensis*; *Corvus Sinensis*, Gmelin: figured in Gould's *Century*. A mountain species, common on the Himalaya, and Mr. Jerdon thinks that he has observed it in open jungle in the Segoor

Pass of the Neilgherries, and he has seen specimens killed in the eastern range of ghâts of Southern India.

3. *Cr. leucogastra* ; *D. leucogastra*, Gould, *P. Z. S.* 1833, p. 57, and figured in *Trans. Zool. Soc.* I, pl. XII. Mr. Jerdon has only seen this elegant species in the jungles of Malabar and the Wynaad, and it would appear to be peculiar to the Indian peninsula.

4. *Cr. rufigastra* ; *D. rufigastra*, Gould, *P. Z. S.* 1837, p. 80. "Nearly allied to, but differs from *Cr. leucogastra* in its shorter tail, and in the less extent of the black colouring on the tips of the two central tail-feathers, in the chestnut-brown colouring of the under surface, and in the thickened and more robust bill. India."

5. *Cr. frontalis* ; *D. frontalis*, McClelland and Horsfield, *P. Z. S.* 1839, p. 163. Assam.

6. *Cr. altirostris*, Nobis, *ante.* Darjeeling.

Other species of this genus exist, or appear to exist, in — 7. *Cr. rufa* ; *Corvus rufus*, Latham, *Supp.* ; *la Pie Rousse de la Chine*, Sonnerat ; and figured by Levaillant as *la Pie Rousse*, *Ois. de l'Afrique*, pl. 59: which was observed in China by Sonnerat, and is said to be also found in India.—8. *Cr. rufiventris* ; *Pica rufiventris*, Vieillot : Shaw's *Zoology*, XIV, 64. Apparently very closely allied to, if not identical with, *Cr. vagabunda* ; and said to inhabit Eastern Asia.—9. *Cr. leucoptera*, *Glaucopis leucopterus*, Tem., *pl. col.* 265, (see also Griffith's *Work*, VII, 184, or Shaw's *Zoology*, XIV, 73:) from the Malayan Archipelago.*—10. *Cr. temnura* ; *Gl. temnura*, Tem., *ibid.* 337: briefly described in Griffith's work as — "Plumage dusky-black, shaded with dark grey; tail curiously scalloped, India?"—And 11. *Cr. varians* ; *Corvus varians*, Latham, *Supp.* ; *Temia*, Levaillant ; *Phrenotrix temia*, Horsfield, *Lin. Trans.* XIII, pt. I, 162, and figured and further described in his 'Zoological Researches in Java.' Inhabits the Malay countries, and (apud Helfer) the British Tenasserim provinces.

Calliope (? Gould) *cruralis*, Nobis. Under this generic designation, I avail myself of Mr. Jerdon's suggestion to merge the genus *Larvivora*, Hodgson, *J. A. S.* VI, 102, at least as instanced by the

* This I have just received, and find that it is properly referred to a separate genus—*Temnuris*, Lesson. Mr. Hodgson's generic name *Temnoris* approaches this too nearly.

Phœnicura superciliaris, Jerdon (*Supplement to Catalogue*), which quite agrees with Mr. Hodgson's description of *L. cyana**: and the present species is only distinguishable from that bird, on its upper parts, by a very slight and inconspicuous character; whilst the lower, being concolorous with the former, but paling a little on the belly, affords a very striking contrast with those of *C. cyana*, wherein they are wholly bright ferruginous with the exception of the lower tail-coverts: the tarsi, also, of our present species are considerably longer, as in my *Cinclidium frontale*, and of a dark colour: its wings are shorter and rounder than in the other species of *Calliope*; and tail rather shorter and weak. Length five inches and a quarter, of wing two inches and five-eighths, and tail an inch and three-quarters; bill to forehead (through the feathers) nearly five-eighths of an inch, and typically formed; tarse an inch and a quarter. Colour a full deep cyaneous, or dark greyish-blue, paling on the belly, and relieved by a white superciliary streak, confined to the bases of the feathers and yet shewing conspicuously: bill black; and legs (in the dry specimen) brownish-dusky. This bird is reported to be a pleasing songster.

The genus *Calliope* would accordingly consist of the following five species, all natives of India or the Himalaya, being at most winter visitants in the low country.

1. *C. Lathamii*, Gould, *Icones Avium*; *Motacilla Calliope*, Pallas; *Turdus C.*, Latham; *Accentor (!) C.*, Temminck. A regular winter visitant in Bengal, and found likewise in Central India: being met with (according to the season) over the greater part of Asia, even in Kamtschatka. It is closely allied to restricted *Turdus*.

2. *C. pectoralis*, Gould, *Icones Avium*. Has a more graduated tail than in the others, tipped with white, which also extends over the basal half of the tail-feathers, except the middle pair, and on the exterior web of the outermost pair: general colour dark ashy, the middle of the belly white, breast and sides of the throat black, the rest of the throat bright crimson, and a white superciliary streak. Inhabits the Himalaya.

3. *C. cyana*; *Larvivora cyana*, Hodgson, *J. A. S.* VI, 102; *Phæ-*

* The Society has since received a specimen from Mr. Hodgson, shewing the above identification to be correct.

nicura superciliaris, Jerdon, *Supplement*. Nepâl: also the Neilgherries.

4. *C. brunnea*; *L. brunnea*, Hodgson, *ibid* (*Non vidi*). Nepâl.*

5. *C. (?) cruralis*, Nobis, *ante*. Darjeeling.†

Rhipidura hypoxantha, Nobis. Length four inches and a half, by six inches in alar expanse; of wing two inches and one-eighth, and middle tail-feathers two inches and a quarter; bill to forehead (through the feathers) under three-eighths of an inch, being proportionally much shorter than in its congeners; and tarse half an inch. Colour of the upper-parts dusky-ash, tinged with green on the head; lores black; a bright yellow eye-streak, continued across the forehead; and the under-parts wholly bright yellow: tail conspicuously white-shafted, with also white interior edges to the feathers for their terminal half: bill dusky above, the under mandible pale; and legs pale brownish, darker on the toes. Darjeeling. Specimen preserved in spirits.

The following are the Asiatic species of this genus at present known to me:—

1. *Rh. fuscoventris*, Franklin, *P. Z. S.* 1831, p. 117; *Broad-tailed Flycatcher* of Latham; *Muscicapa (Muscylva) albogularis*, Lesson, *Zoologie du Voyage de M. Bélanger*, p. 264. Common in the vicinity of Calcutta at all seasons, but rather of local distribution in peninsular India.‡ The male has a short, but musical, tinkling song.

2. *Rh. albofrontata*, Franklin, *ibid*. Common in peninsular India, extending northward to the vicinity of Saharunpore, where the preceding species is also met with; but it does not appear to occur in Lower Bengal.

3. *Rh. pectoralis*, Jerdon, *M. S.*§ Length about seven inches, of which the tail measures nearly four inches; closed wing three inches. Upper-parts brownish-dusky; the head black, passing into the former:

* Mr. Hodgson says "sexes alike," or I should have suspected the female of *C. Lathamii* to be intended.

† A Nepalese example of this species has just been received from Mr. Hodgson, who refers it to his genus *Larvivora*.

‡ The *Rh. fuscoventris* mentioned in Mr. Jerdon's catalogue as having been seen, but not procured, by him on the Neilgherries, proved to be *Rh. pectoralis*; but the other is included in Col. Sykes's list of the birds of Deccan, *P. Z. S.* 1832, p. 85.

§ Briefly described in the first No. of Mr. Jerdon's 'Illustrations of Indian Ornithology', which has just appeared.

superciliary streak, throat, and belly, white; the under tail-coverts tinged with rufous: sides of the throat and breast, black, the middle of the latter marked with oval white spots, smaller in front: wings dusky, the coverts slightly tipped with albescent; and tail the same, all but its middle feathers, passing gradually into whitish towards their extremity. Bill black; and legs dusky. The tail is much graduated, having its outermost feathers two inches shorter than the middle ones. Inhabits the Neilgherries.

4. *Rh. Javanica*; *Muscicapa Javanica*, Sparrman; *Platyrrhynchus perspicillatus*, Vieillot. Malay countries generally.

5. *Rh. nigritorquis*, Vigors, *P. Z. S.* 1831, p. 97. Philippine Islands: perhaps identical with last.*

6. *Rh. hypoxantha*, Nobis, *ante*. Darjeeling.†

Columba (Macropygia, Swainson,) [*tusalia, Hodgson.*] Male fifteen inches and upwards, of which the tail measures seven inches and a half, its outermost feathers four inches and a half shorter, and the rest evenly graduating; wing seven inches and five-eighths, the third primary rather the longest, and the second a little exceeding the fourth; bill to feathers scarcely five-eighths of an inch, and tarse seven-eighths. Colour of the upper-parts dusky-black, each feather narrowly but conspicuously margined, and more or less barred, with deep rufous; the forehead and cheeks whitish-grey, tinged with lilach: throat whitish: crown gradually more ashy; and occiput, nape, and hind-neck, successively more broadly margined with brilliantly glossed extremities to the feathers, of a changeable hue from green to purplish-red, upon a dark ashy ground; sides of the breast the same, its medial portion more narrowly thus edged: belly slightly tinged with pale buff, deeper on the lower tail-coverts: greater wing-feathers wholly dusky; and tail the same, its four medial feathers somewhat obscurely crossed with numerous rufous bars, the outermost pair greyish-white for the basal two-thirds of their exterior web, and the rest of the tail—except the middle feathers—ashy at

* Add *Rh. collaris*, Lesson, *Rev. Zool. par la Soc. Cuv.* 1839, p. 104. “*Corpore nigro; collo anticè niveo; superciliis albis; caudæ pennis albo marginatis aut terminatis.* Hab. Timor.” This description does not well distinguish it from *Rh. fuscoventris*.

† Mr. Hodgson has lately sent a specimen also of this bird, which he separates from *Rhipidura* by the name *Chelidorynx*, an arrangement which I shall now adopt.

base, with a broad subterminal dusky band, and greyish tips successively paler to the outermost: bill dusky-black (in the dry specimen), and feet have evidently been coral-red. Female rather smaller, and similar to the male on its upper-parts, except that the barring on the tail is more developed, and the forehead and crown are also crossed with narrow rufescent lines, together with the entire under-parts. Length about fourteen inches, of which the tail measures seven inches and a quarter, and wings also seven inches and a quarter. Concealing the head and neck, this species might almost be mistaken for a *Cuculus*; more especially the female. From Darjeeling, where extremely common.*

[While the preceding notices were passing through the press, another interesting collection of Darjeeling specimens has been submitted to my inspection, and I have been kindly permitted to make a selection from them. The following appear to be undescribed:—

* Since the above was written, the Society has received a description of this Dove from Mr. Hodgson (dated May 1, 1843), who applies to it the generic or subgeneric term *Coccyzurus*, remarking further on its *Cuculine* appearance; but he mentions having “discovered it some years ago, and written a character of it on the back of the drawing (No. 663), that went to England long ago to be locked up there!” His description now sent is as follows:—

“*Vinagina*. [To this location of it I demur altogether.—E. B.] Genus *Coccyzura* (olim *Tusalia*), Hodgson. Bill long and slender, as in *Columba*: wings short; the third quill longest. Tail as in the *Coccyzinæ*, or very long, broad, and graduated throughout, with broad ends to the feathers. Legs and feet suited for perching only, and slender: tarse equal to the thumb: toes long and slender, flat-soled, the inner and hind bordered, and unequal all: nails large, simple. Rump spinous.

“Type. *C. tusalia*, Hodgson. Head and neck as in the common wild Pigeon, with golden-green gloss on latter. Above, brown-black, cross-banded with chestnut (in young?); below, rufescent-luteous with frequent dusky cross-bars. Alars blackish. Central caudals like back; laterals plumbeous with broad dark bar as in the wild Pigeon. Legs, orbits, lores, and cere, red: bill black. Length sixteen inches and a half: bill to gape one inch: tail eight inches and a half: wing seven inches and a half: tarse to sole fifteen-sixteenths of an inch: central toe and nail one inch and seven-sixteenths; hind fifteen-sixteenths of an inch. Solitary, and a deep forester: not found in the plains.

“Remark.—This form, like Swainson's *Ptilinopus* and our *Dendrotreron* [Col. Hodgsonii, Vigors, P. Z. S. 1832, p. 16], serves to connect the *Columbinæ* or Insectorial or typical Pigeons with the *Vinaginæ* (or denti-rostral?) or tree Pigeons. It has much the aspect of a Cuckoo, and the tail exactly of the *Coccyzinæ*, the bill of *Columba* proper, and the feet nearly of *Ptilinopus*. It represents *Geopelia* of the *Ptylophyrina* or rasorial Pigeons (ground *Columbines*), and is closely allied to, if not a subgenus of, *Macropygia*.”

Sitta formosa, Nobis. This very beautiful bird appears to present no sufficient distinction upon which it could be separated from the ordinary Nuthatches, though the style of colouring of its upper-parts is peculiar, and its size also is comparatively large: the relative length of its wing-primaries may, however, be different; but these were in process of renewal in the specimen before me. Length about seven inches and a half, of wing four inches, and tail two inches and a quarter; bill to forehead (through the frontal plumes) seven-eighths of an inch; tarse three-quarters of an inch; and hind-toe and claw an inch. Colour of the upper-parts black, beautifully variegated with different shades of ultramarine-blue; the scapularies and rump verdigris; and the wing-coverts and tertiaries elegantly margined with white at their tips: under-parts bright rusty-fulvous, somewhat paler on the breast, and inclining to albescent on the throat: the frontal feathers are tipped with white, and around the eye also is whitish, continued backward as an ill-defined supercilium tinged with fulvous posterior to the eye: crown and back deep black, each feather tipped with brilliant ultramarine, forming large and pointed triangular spots; on the back these incline more to verdigris, and are dilute and whitish over the shoulder: wing-coverts black, with strongly contrasting terminal white margins as described, and more or less laterally edged, as are also the large alars, with bright lavender-blue, which likewise appears within the white margin of the tertiaries, and tips their inner-webs; middle tail-feathers lavender-blue, with black mesial line, the rest black edged externally with blue, and tipped with duller blue, the outermost having a large white spot at the extremity of its inner web, and the next a smaller terminal spot of the same. "Irides dark: bill blackish, the lower mandible pale underneath: and legs greenish horny, with yellow soles."

Kitta venatorius (var.?). Entirely resembles the ordinary *K. venatorius* in form and proportions, but the colour beautiful deep sea-green, the head a more yellowish-green, and a distinct tinge of yellow on the sides of the forehead, above the broad black streak through the eyes; wings sanguineous, brightest on the secondaries and outer margin of the tertiaries, the latter having the subterminal black bands and verdigris tips strongly defined. "Iris hazel; legs, bill, and eyelids, vermillion." The rump of this most beautiful specimen inclines a little to the usual verdigris-blue of the species, and there is also a

slight admixture of the same here and there upon the back and especially on the scapularies. The specimen is a male, and I conceive it to exhibit merely the thoroughly mature dress of its species. Of several examples before me in ordinary attire, both adult and young, not any present a decided admixture of green on the plumage, and one only (a young bird from Tenasserim) has the wings rusty-sanguineous, others exhibiting more or less trace of the same, chiefly on the interior of the feathers, the rest being dingy greyish. I also observe that in the golden-winged species of the genus *Garrulax* (v. *Crateopus*), as *G. chrysopterus*, *affinis*, &c., the analogous yellow colour is similarly convertible to dull greyish, which occasionally margins the feathers, concealing the brighter tint within.

Muscicapula, Nobis. *n. g.* The members of this group are nearly allied to *Dimorpha* (olim *Siphya*), Hodgson, *Ind. Rev.* 1839, p. 651, from which they are chiefly distinguished by their small size and feeble legs and toes, the latter approaching them nearer to the Flycatchers. The brilliant colouring of the first allies it to restricted *Chaitaris* (olim *Niltava*), Hodgson, and also to the group exemplified by *Phœnicura rubeculoides* of Vigors and Gould, which now that I have three species appertaining to it, I venture to separate from *Chaitaris*, to which Mr. Hodgson formerly referred the *rubeculoides*. The following four are referrible to the present division:—

1. *M. sapphira*; *Muscicapa sapphira*, Tickell, *M. S.* Length five inches, of wing two inches and a half, and tail an inch and seven-eighths; bill to gape nine-sixteenths of an inch, and tarse five-eighths of an inch. Colour of the upper-parts rich dark purplish-blue, inclining to ultramarine on the rump and upper tail-coverts; forehead and crown vivid smalt-blue; the lores black; fore-neck and breast rich purple, with a broad median line of deep and bright ferruginous; flanks greyish, the belly and fore-part of the wings underneath, with the axillaries, white; alars and tail black edged with blue externally. Bill and feet black. Unlike the three following species, the *M. sapphira* has no white at the base of its tail externally. Procured at Darjeeling.

2. *M. superciliaris*; *Muscicapa superciliaris*, Jerdon, *Madr. Jl.* XI, 16; *Dimorpha albogularis*, Nobis, *J. A. S.* XI, 190. Himalaya, and has been obtained also in Central and Southern India.

3. *M. melanoleuca*, Nobis, Hodgson. Length four inches and a half, of wing two inches and a quarter to two and three-eighths, and tail an inch and seven-eighths; bill to gape nine-sixteenths of an inch, and tarse half an inch. Colour wholly black and white: the upper-parts black, with a broad white eye-streak, and broad longitudinal mark of the same upon the wings, commencing on the coverts of the secondaries and continued along the margin of the tertiaries, which in some are further edged with white round their tips; under-parts also white, and basal half or more of the outer tail-feathers. Bill and feet black. Nepal, Darjeeling.

4. *M. rubecula*, Nobis; *Dimorpha superciliaris*, Nobis, *J. A. S.* XI, 190, which specific name must now be transferred to the second species. Nepal, Darjeeling.

Of true *Dimorpha*, Hodgson, I know of only two species; viz.

1. *D. strophciata*, Hodgson, upon which the group was founded: and

2. *D. auricularis*; *Chaitaris auricularis*, Hodgson, *M. S.*: which has the cœrulean spot on the sides of the neck common to the species of restricted *Chaitaris*, but the rest of its plumage is plain dull olive, rufescent on the wings and tail, and slightly on the rump, the under-parts paler and inclining to whitish on the belly. Length about five inches, of wing two inches and a half, and tail two inches; bill to gape nine-sixteenths of an inch, and tarse five-eighths of an inch. Inhabits Nepal and Assam.

Very closely allied to these is the *Muscicapa leucura*, Gm., the adult male of which is *Saxicola rubeculoides* of Sykes: but Mr. Hodgson makes a separate group of it, though it scarcely differs except in having the first primary less developed and the second more so.

Of true *Chaitaris*, I know of three species; viz.

1. *Ch. grandis*, Nobis, *J. A. S.* XI, 189. Common at Darjeeling.

2. *Ch. sundara*, Hodgson, *Ind. Rev.* 1837, p. 651. Also common at Darjeeling and in Nepal: and

3. *Ch. McGregorii*; *Phœnicura McGregorii*, Burton, *P. Z. S.* 1835, p. 152; *Ch. fuligiventer*, Hodgson. Himalaya. The following species I separate by the appellation

Cyornis, Nobis: having the bill less compressed, the tarsi shorter and together with the toes more feeble, and altogether partaking more

of the Flycatcher form; they also have not the brilliant cœrulean spot on the sides of the neck conspicuous in the foregoing group.

1. *C. rubeculoides*; *Phœnicura rubeculoides*, Vigors, *P. Z. S.* 1831, p. 35; *Chaitaris brevipes*, Hodgson. Himalaya, and visits the neighbourhood of Calcutta during the cold season, where I have obtained several specimens; but I have never seen it from the Indian peninsula.

2. *C. banyumas*; *Muscicapa banyumas*, Horsfield; *M. cantatrix*, Temminck; *M. aurea*? Lev.,* which name would hold precedence; *M. rubecula*, Swainson, *Nat. Libr.*, the female. Southern India and Malay countries.

3. *C. Tickellia*, Nobis; *M. hyacintha*, Tem., apud Tickell, *J. A. S.* II. 574. Of a more greyish blue than the preceding species on the upper-parts, brightening on the forehead, shoulders of the wings, and upper tail-coverts; throat and breast light ferruginous, the belly albescent, and under tail-coverts pure white; the rufescent medial portion of the throat much broader than in the preceding species. Length five inches and three-quarters, of wing two inches and three-quarters, and tail two inches and a half; bill to gape eleven-sixteenths of an inch, and tarse five-eighths of an inch. Bill blackish; legs pale. Inhabits Central India.†

* I have somewhere seen this identified with *M. cantatrix*.

† Add 4. *C. unicolor*, Nobis. Vide *Addenda* to *Appendix* of present *Report*. I annex identifications of most of Capt. Tickell's other species, described in the same paper.

No. 1, *Hyptiopus lophotes*; 2, *Circus æruginosus*; 3, *C. melanoleucos*, young; 4, a good species; 5, *Ketupa Leschenaultii*; 6, *Strix longimembris* (?), Jerdon; 7, *Athene radiatus*, (Tickell), — *erythropterus*, Gould, — *perlineatus*, Hodgson; 8, *Ninox scutulatus* (Raffles), v. *hirsutus* (Tem.); 9, *Ceblepyris melaschistos*; 10, *Tricophorus virescens*, Jerdon, v. *Ixos Psidii*, apud nos, p. 181* ante; 11, *Dicrurus cœrulescens*; 12, *Tephrodornis superciliosus*; 13, *Brachypus melanocephalus* of Hardwicke and Gray, vide *J. A. S.* XI, 792; 14, *Cometes krishna*; 15, *Muscicapa picata*; 16, *Pericrocotus princeps*; 17, *Cyornis Tickellia*, Nobis, supra; 18, 19, the names refer to the same, *Muscicapa cœrulea*, Vieillot; 20, — ?; 21, *Pericrocotus peregrinus*; 22, *Saxicola caprata* (?); 23, *Copsychus saularis*; 24, *C. macrourus*, — *Kittacincla* of Gould; 25, *Cyanecula Suecica*; 26, *Calliope Lathamii*; 27, probably *Mixornis* (Hodgson) *chloris*, vide XI, 794; 28, — ?; 29, *Prinia macroura*; 30, *Sylvia Indica*, apud Jerdon; 31, — ?; 32, *Thamnobia fulicata*; 33, *Iora typhia*; 34, *Geocichla citrina*; 35, a good species; 36, *Oriolus Hodgsonii*, Sw., young male; 37, *Nectarinia Goalpariensis*; 38, *Dicaeum Tickellia*, Nobis; 39, *Chloropsis cæsmarhynchos*, vide p. 956; 40, probably *Emberiza fucosa*, *J. A. S.* XI, 601; 41, *Spermestes leuconotus*; 42, *Parisoma vireoides* of Jerdon's list; 43, *Pyrgita concolor*? ditto; 44, *Pyrgita flavicollis*; 45, *Picus Goensis*, fœm.; 46,

To these must be approximated *Saxicola nigrorufa*, Jerdon, *Madr. Jl.* 1842, p. 189; vel *Muscicapa rufula*, de la Fresnaye, Ad. Delessert, *Souvenirs*, &c, pt. ii, 29; which probably will be eventually found to exemplify another of these small natural divisions, intermediate to the last and to the Stonechats.]

I shall now refer to my former paper on a collection of birds from the same locality (Vol. XI. p. 160, *et seq.*), certain of which, introduced as new, I have since succeeded in identifying with previous descriptions, and some of my efforts at monographing various groups I can now render more complete, from having subsequently received accessions, more or less considerable, to the number of their comprised species.

Vol. XI, p. 160. *Falco Aldrovandi*, v. *severus*, Horsfield. The Darjeeling male appears to have been rightly assigned to this species; but the supposed female and young are distinct: and the Neilgherry small Falcon mentioned in a note to p. 162, proved to be *F. vespertinus* v. *rufipes*, vide p. p. 881-2.*

P. 165. Several small Owls are mentioned, of which the *Strix scutulata*, Raffles, *Str. hirsuta*, Temminck, *Str. lugubris*, Tickell, and it may be added *Ninox Nipalensis*, Hodgson, are one and the same.

P. 166. I have deemed it worth while to publish a figure of the Yellow-backed Honeyguide (*Indicator xanthonotus*, Nobis), which will shew that that species is correctly referred to its genus, of which it was assuredly little suspected that any representative would inhabit the Himalaya.

P. 168. *Cuculus micropterus*. In my description of this Cuckoo (*J. A. S.* XI, 903), I considered certain dark ash-coloured specimens to be merely the old birds of this species, an opinion to which I still adhere. Mr. Hodgson, however, thinks differently, having lately forwarded similar examples by the designation *C. saturatus*. One sent as the

P. aurantius; 47, *P. Mahrattensis*; 48, *Dendrophila frontalis*, v. *Sitta corallina*, Hodgson; 49, *Buceros Malabaricus* verus; 50, correct; 51, probably a species closely allied to *Bucco viridis*, v. *caniceps*, of which I have information; 52, *Tragan Malabaricus*?; 53, *Caprimulgus* —?; 54, *Macrapteryx langipennis*; 55, *Carpophaga ænea*; 56, *Columba meena*; 57, 58, 59, correct; 60, *Parra Indica*, immature.

* The *Falco Aldrovandi* has recently been described in McClelland's Journal, (1843, page 283,) as *F. rufipedoides*. *F. vespertinus* I have lately obtained in this neighbourhood.

young appears to me to be a female in the plumage corresponding to the *hepaticus* variety of *C. canorus*, which is so prevalent also in the following species.

Same page. For *Cuculus Sonneratii*, read *C. poliocephalus*, Latham, vide p. 904. Both of these species (i. e. *micropterus* and *poliocephalus*) have recently been obtained in southern India by Mr. Jerdon.

Mr. Hodgson has also forwarded an apparently distinct species by the appellation *C. niscolor*, to which I have no hesitation in referring the young specimen from Macao mentioned in a note to p. 240, *ante*. It is closely allied to *C. fugax*, from which it is chiefly or wholly distinguished by its much deeper colouring. Mr. Hodgson's example would appear to be a remarkably small one, and is probably a female; but the difference of size between it and the young specimen from Macao is not greater than occurs in the respective series of *C. canorus* and *C. micropterus* now lying before me. Length about twelve inches and a half, of wing six inches and five-eighths, and middle tail-feathers five inches and three-quarters; bill to gape an inch and three-sixteenths. Colour of the upper-parts very dark pure ash-colour; throat and cheeks the same, as in *C. fugax*: under-parts and tail also as in the latter species; but the flanks not barred (in the specimen): throat below the chin contrasting with the dark ashy above and laterally, and the central marking of the feathers of the throat deep ash, like the rest of this colour, it being very dark on those of the fore-neck. The Macao specimen is moulting its tail-feathers, but has the wing seven inches and a half long, being probably a young male. Cap, with the throat, ear-coverts, and sides of the neck, very dark ashy, and several white feathers on the nape, as in some young examples of *C. fugax*; interscapularies dusky ash, very faintly rufous-barred, imparting a shade of that colour to the part; scapularies, tertiaries, and wing-coverts, successively more distinctly barred with bright rufous; the fore-neck tinged and the plumage of the breast tipped with the same; and the under-parts longitudinally streaked throughout with dusky, shewing no trace of bars on the flanks: lower tail-coverts dull white: bill and feet as in *C. fugax*.

Since the Supplement to my Monograph on Cuckoos was published (p. 240 *ante*), Mr. Jerdon has favored me with copies of the descriptions of *Cuculidæ* in Lesson's *Traité*. The *C. fugax* is there des-

cribed by the specific name *tenuirostris*, which term is applied by Gray in Hardwicke's Illustrations to the female of *C. niger*. *C. flavus* is described from Bengal and Java, the *niger* being thus regarded as identical with it (vide p. 241 *ante*;) and a variety (?) is mentioned, only half the size, but presenting no other difference. There is also described a *C. lineatus*: "like *C. flavus*, but larger; above brown-grey, darkest on wings and back; beneath rufous, barred with black; tail brown above, edged with white beneath. East Indian Isles."*

The *C. (Chrysococcyx) lucidus*, (vide XI, 917,) would appear to be Himalayan. At least a specimen occurs in a collection formed partly in the Himalaya, and partly in central India, presented to the Society by C. Fraser, Esq.; and a member of this group is mentioned in a catalogue of Nepalese birds forwarded by Mr. Hodgson.

C. (Chrysococcyx) chalcites? (XI, 919). A specimen which I presume to be the adult male of this species, from Macao, considerably resembles the young of *C. lucidus*, and may be described as follows. Length about five inches and three-quarters, of wing three inches and a half only, and tail two inches and a half; bill to gape three-quarters of an inch, and tarse exceeding half an inch, being feathered for only the upper third. Upper-parts metallic green, not very vivid, and much bronzed: lower-parts white, transversely barred with the colour above: tail having an obscure subterminal dusky bar, beyond which, on the extremity of the inner web of each feather save the middle pair, is a white spot; the rest of the inner webs of the outer tail-feathers are barred black and white, successively less defined and more tinged with rufous as they approach the middle pair: bill blackish, with some yellow at the base of the upper mandible; and legs also dark.

To return to M. Lesson's Cuckoos, it appears that *Phœnicophæus calorhynchus* (*J. A. S.* XI, 1098,) is identical with *Zanclostomus Javanicus*; and the *Piaya erythrorhyncha*, Lesson, would seem to be referrible to the same. *Taccocœa Leschenaultii* appears to be identical with *Zanclostomus sirkee*. The *Phœnicophæus lucidus*, Vigors, *Ph.*

* Two specimens from Chusan differ only from the Indian bird in their rather smaller size, though the beak appears fully as large. Both are in the plumage which I have described as the second dress of the male *C. niger*, having the under-parts rufous from the breast, and one of them retaining some of the barred nestling feathers upon its wings. Length of the wings (in both) four inches, and of tail four inches and one-eighth. Of the Bengal bird, I have recently obtained female speci-

Crawfurdii, Gray, and *Calobates radiceus*, Temminck, I have still no means of referring to.

Of *Centropus Phillipensis*, M. Lesson mentions a variety (?) from Sumatra, only half the usual size: body above dull brownish-black; wings dirty rufous.* His young or female from Bengal would seem to be a state of plumage of *C. lepidus*: "size of a Magpie; plumage brown, spotted and zoned with blackish brown, streaked with white on the fore-part of the neck; tail brown above, rayed with whitish." *C. pumilus* is doubtless *C. Bengalensis*, Latham, thus described from specimens in the Paris Museum: "Male size of a Thrush; bill black with a white spot; tarsi brown; plumage brown-black tinted with rufous; tail wedged, broad, brown: from Java (!): female—a little larger

mens in the green-glossed dark ashy plumage, with ferruginous under-parts from the breast, one of them having the latter much brighter than in any male I have yet seen, the feathers of its breast being also partially tipped with the same; another female with uniformly dark upper-parts, has the entire under-parts scantily banded with dull rufous, and traces of the same also on the forehead and above the eyes; a third female tends towards the *hepaticus* variety of plumage, having the upper-parts dark, with rufous bars, which are darker and less conspicuous on the back and scapularies, but vivid and strongly marked on the wing-coverts and tail, the rump dark with faint traces of rufous, and the entire under-parts pale and weak ferruginous, with narrow dusky cross-bars, except on the under tail-coverts and towards the vent; a fourth female, in the true *hepaticus* plumage, with a ferruginous rump, is that described as exhibiting the mature female livery, in XI, 909. Well may M. Lesson designate this bird (or an allied smaller species resembling it) a "perfect Proteus."

* Such a specimen I have now before me from Chusan, of the size and with the form of beak of *C. lepidus*, but the colouring of *C. Phillipensis*, only the rufous is not so bright, being washed with fuscous especially on the tertiaries, and the stems of the dorsal feathers are more coarsely spinous and glistening. Length about fourteen inches, of which the middle tail-feathers measure seven and a half, the outermost nearly four inches less; wing six inches: bill to gape an inch and one-eighth, and nine-sixteenths of an inch in greatest vertical depth; tarse an inch and a half; and long hind-toe and claw an inch and three-fourths. Should this not be named, I propose to designate it *C. dimidiatus*.

C. lepidus extends into Nepâl, a specimen from that country having been forwarded by Mr. Hodgson; and an example of the young in first plumage, from the Malay peninsula, may be described as follows:—Upper-parts light chestnut, handsomely barred with black, these bars more narrow on the wing-coverts, primaries and secondaries; tail green-glossed black, with narrow rufous cross-bars; crown and neck above longitudinally striated, the spinous shafts of the feathers little developed, and their lateral margins black: under-parts pale fulvescent, with slight dusky barring on the flanks, and spots of the same on the sides of the neck: bill pale yellowish-horn, the ridge of the upper mandible reddish-brown. M. Lesson's Bengal specimens above noticed would not appear to differ materially.

than the male; bill horny: plumage reddish white, rayed with brown; wings bright rufous; tail long, much wedged, brown, edged with reddish-white: Sumatra.

“*Centropus bicolor*; Paris Museum. Bill and tarsi black: plumage smoky greyish-white, darkest on head, back, and wings, brightest on throat and breast; belly and anal region tinted with reddish-ochreous: tail cinnamon-rufous. Celebes, Moluccas.

“*C. melanops*; Paris Museum. Size of *C. Senegalensis*: bill and tarsi black: forehead, cheeks, and around the eyes, intense black; throat white; neck and breast ferruginous; abdomen and anal region dull black; back rust-coloured; wings chocolate; tail bluish-black. Java.”*

P. 169 *et seq.* For a more complete monographic notice of the Indian Drongos, vide p. 799 *et seq.*, also p. 180 (*bis*) of the present volume. Mr. Hodgson has, however, sent specimens of *Dicrurus bali-cassius* verus, as his *annectans*; and has also forwarded from Nepâl *D. Fingah*, *macrocircus*, and *cærulescens*.

P. 175. The following is a more complete list of the species of *Pomatorhinus*.

1. *P. erythrogeus*, Vigors, *P. Z. S.* 1831, p. 137, and figured in Gould's *Century*, pl. LV. Himalaya.

2. *P. montanus*, Horsfield, *Lin. Trans.* XIII, 165, and figured in the ‘Zoological Researches in Java’ of that naturalist. Java.

3. *P. schisticeps*, Hodgson, *As. Res.* XIX, 181; *P. leucogaster*, Gould, *P. Z. S.* 1837, p. 137. Himalaya, Assam.

4. *P. Horsfieldi*, Sykes, *P. Z. S.* 1832, p. 89. Neilgherries.

5. *P. ruficollis*, Hodgson, *As. Res.* XIX, 182. Himalaya.

6. *P. trivirgatus*, Temminck, *Pl. Col.* 443; figured also in the ‘Illustrations of Ornithology’ of Sir W. Jardine and Mr. Selby, pl. LXIX. Australia.

7. *P. turdinus*, Temminck, *Pl. Col.* 441. Australia.

8. *P. temporalis*, Vigors and Horsfield, *Lin. Trans.* XV, 330. Australia.

9. *P. superciliosus*, Vigors and Horsfield, *Ibid.* Australia.

10. *P. rubecula*, Gould, *P. Z. S.* 1837, p. 137. Australia.

* For further descriptions of Asiatic *Cuculidæ*, vide XI, 897 and 1095, also p. 240, ante.

11?. *P. frivulus*; *Turdus frivulus*, Latham, Vieillot; Australia: referred to this genus by Mr. G. R. Gray, *Mag. Nat. Hist.* 1843, p. 192. The Mexican *Orpheus longirostris*, Swainson, is strangely referred to *Pomatorhinus* by M. Temminck in his *Planches coloriées*, vide *Fauna Americana-borealis*, II. 191. Probably one of the subsequently described Australian species will prove identical with *P. frivulus*; this genus having been originally constituted upon a single species.

In Dr. Horsfield's catalogue of the Assamese birds procured by Dr. McClelland, *P. Z. S.* 1839, p. 166, *P. montanus* is included, with the remark that "no essential difference is apparent between a specimen of this bird sent from Assam and the specimens obtained in the Island of Java, from which the original description was made." A drawing, however, in Dr. McClelland's possession, taken from the only specimen of this genus which was procured by him, refers distinctly to *P. schisticeps*; a species which undoubtedly is nearly allied to *P. montanus*, as is also the *P. Horsfieldi*, but all three present constant differential characters, as follow:—

In *P. montanus*, the whole back and scapularies, with the nape, are bright chestnut-rufous; crown and sides of the head schistaceous; and a superciliary streak reaching to the occiput, with the entire under-parts to near the vent, vivid white, the latter flanked with rufous.

In *P. schisticeps*, the rufous is confined to the immediate border of the white under-parts; the neck, back, and scapularies, being wholly olivaceous: in other respects like the preceding. The young, too, present no difference of colour, further than that the crown is browner; their wings and tail being also shorter, and the clothing plumage flimsy, at least in part.

In *P. Horsfieldi*, the rufous is constantly wanting altogether, besides which the white extends but little beyond the breast, which is flanked with dusky: in other respects it resembles both the others.

The geographic locations of these three species are different; and the Himalayan *P. schisticeps* is the most likely of them to occur in Assam.

Same page. My genus *Xiphirhynchus* being identical in name with Mr. Swainson's *Ziphorhynchus*, I change it to *Xiphorhamphus*, and supply a figure of the species upon which it is founded.

P. 177. I also give a representation of *Paradoxornis ruficeps*; but regret to add that the artist (for whom I furnished a rough sketch) has

made it look rather too large, from the hardness of the back-outline in particular, the feet are coarse and ill-drawn, and the wing from bend should be three-eighths of an inch longer, the addition being made in front. This species occurs at Darjeeling.

P. 178, *et seq.* Genus *Garrulax*, Lesson; *Crateropus*, Swainson; *Ianthocincla*, Gould; *Cinclosoma* (in part), Vigors, Hodgson. During the short time that has elapsed since I published a synopsis of the species of this genus then known to me, the Society's Museum has been greatly enriched by a splendid donation from Mr. Hodgson, which comprised most of the species described by that naturalist, and brought the number of those contained in the Society's collection to fifteen, exclusive of *Nipalensis*, which Mr. Hodgson has since classed in his genus *Alcopus* (olim *Sibia*), vide *J. A. S.* VIII, 38, but now founds upon it his genus *Ixops*. The Society has since also received the Neilgherry *G. cachinnans* from Mr. Jerdon, and a new species from Capt. Phayre, Commissioner of Arracan. By some oversight, I omitted on that occasion to include the *G. setafer*, Hodgson; and now that this gentleman has supplied the Society with specimens of the bird so named by him, I find that a Bootan species in the museum which I had doubtfully identified with it, though nearly allied, is distinct from it, besides which are other new species comprised in the following conspectus of the oriental members of this group, with which I am at present acquainted.

1. *G. leucolophos*; *Corvus leucolophos*, Gmelin: figured in Gould's *Century*, Pl. XVIII. Himalaya.

2. *G. Belangeri*, Lesson, *Zoologie du Voyage de M. Bélanger*, p. 258, with coloured figure: *Ianthocincla leucolophos*?, Var., Nobis, *J. A. S.*, X, 924. Common in the Tenasserim provinces, and procured by M. Bélanger in Pegu.

3. *G. rufifrons*, Lesson, *Ibid.*, with also a coloured figure. Java.

4. *G. perspicillatus*, G. R. Gray; *Turdus perspicillatus*, Gmelin, — Shaw's *Zoology*, X. 325: *le Merle de la Chine*, Buffon. China.*

5. *G. auritus*; *Corvus auritus*, Latham; *Spreo auritus*, Lesson, *Traité†*: *Crateropus leucogenys*, Nobis, *J. A. S.* XI, 180; *le petit*

* Mr. G. R. Gray appears to consider this as identical with *G. Belangeri*, but Shaw's description of it would hardly seem to apply to the latter.

† *Spreo* of Lesson is founded on *Turdus bicolor* of Gmelin, apud G. R. Gray.

Geai de la Chine, Sonnerat. The specimen described by me was brought, as I have since learned, from China, which is the habitat assigned to the species. *Vide* p. 179 (*bis*) *ante*, for some particulars concerning the individual as observed in captivity.

6. *G. Reinwardii*; *Crateropus Reinwardii*, Swainson, *Ill. Zool.*, 2nd series, II. pl. LXXX. Believed to be Malayan.

7. *G. albogularis*; *Ianthocincla albogularis*, Gould, *P. Z. S.* 1835, p. 187: *Cinclosoma albigula*, Hodgson, *As. Res.* XIX, 146. Nepâl, Bootan.

8. *G. gularis*, McClelland and Horsfield, *P. Z. S.* 1839, p. 159. Assam.

9. *G. pectoralis*, Gould, *P. Z. S.* 1835, p. 186; *Cincl. grisaure*, Hodgson, *As. Res.* XIX, 146. Nepâl.

10. *G. moniliger*; *Cincl. moniliger*, Hodgson, *As. Res.* XIX, 147. Not readily distinguishable from the preceding species, but inferior to it in size, having the wing considerably shorter, the breast-marking generally less developed, and the tail-feathers less deeply tipped with white; the ear-coverts also have less white on them, which is confined to their lower and central portion. Nepâl, Bootan.

11. *G. melanotis*, Nobis. Still more nearly allied to *G. pectoralis*, but having the ear-coverts wholly black, forming a large and conspicuous patch; whereas in the other they are silvery-white, slightly surrounded with black; the lateral tail-feathers are also still more deeply tipped with white, and the uppermost longest tertiaries have a white spot on their inner web. Arracan.

12. *G. McClellandii*, Nobis; *Ianthocincla pectoralis*, Gould, apud Horsfield, *P. Z. S.* 1839, p. 160. Assam. Neither in Dr. McClelland's description of this bird (*loc. cit.*), nor in his coloured drawing of it, is any notice taken of the bright rufous nape of the three foregoing species, nor of the white streak edged inferiorly with black over the eye, nor of the conspicuous whitish ear-coverts of *G. pectoralis*, nor of the greyish-white edgings to the outer primaries; the whole of which are much too obvious to be overlooked in that species. Hence I feel little doubt that the present is a different bird from either of its foregoing nearly allied congeners.

13. *G. lunaris*; *Ianthocincla lunaris*, McClelland and Horsfield, *P. Z. S.* 1839, p. 160. Assam.

14. *G. [ruficollis ;] Corvus pubduya*, Buchanan Hamilton. Nearly allied to the last, which it resembles in the semi-lunar mark on the sides of the neck. Length about nine inches and a half. General colour olivaceous-brown, darkening on the tail, and passing into ash-colour on the crown and occiput: forehead, ear-coverts (including the orbital region), throat, and fore-neck, black: a crescent-like mark of rufous on the sides of the neck, and under tail-coverts the same. Irides red. Bill black; and legs dusky. Described from a beautiful and highly finished drawing, sketched evidently from life, among those of the late Dr. Buchanan Hamilton. Habitat not stated.*

15. *G. variegatus ; Cincl. variegatum*, Vigors, *P. Z. S.* 1831, p. 55, and figured in Gould's *Century*, Pl. XVI. Nepâl.

16. *G. affinis*, Hodgson. *M. S.* Nearly allied both to the last, and (judging from description) to the next species. Length about ten inches, of wing four inches, and middle tail-feathers four inches and three-quarters, the outermost an inch and a half shorter; bill to forehead (through the feathers) an inch, and to gape an inch and one eighth; tarse an inch and a half. General colour rufescent olive-brown, more or less distinctly mottled on the back with paler tips to the feathers; the rump dingy greenish, and upper tail-coverts rufous: sides of the head, lores, cheeks, and ear-coverts, black, occasionally suffusing the crown; chin the same, and a broad moustachial spot, with another behind the ears, white; breast rufous-brown, the feathers laterally edged with grey; belly uniform fainter rufous-brown, and lower tail-coverts darker: the wings have a jetty-black spot, formed by the coverts of the primaries; and the winglet, with the exterior margins of the primaries, is pearl-grey; those of the secondaries and tertiaries partly are greenish-yellow, much as in *G. chrysopterus*, the remainder of the tertiaries and tips of the secondaries being slaty-grey; anterior portion of the wing coloured like the back; and basal two-thirds of the tail dull greenish-orange, the rest slaty-grey: bill black, and feet pale brown. Inhabits Nepâl.

* This would seem to be the *Ianthocincla ruficollis* of Jardine and Selby's 2nd series of Illustrations, which I have not seen; to judge from the following diagnosis sent me by Mr. Jerdon. "*I. fronte, genis, auriculis, gulâ, superiore pectoris, nigris; capite superiore colli griseis; lateribus colli crissoque rufis: colore colli maculâ curvatâ extendente ad gulam, corpore alisque olivaceo-griseis, remigibus marginibus griseis; caudâ nigrescente.* Hab. Himalayas."

17. *G. capistratus*; *Cincl. capistratum*, Vigors, *P. Z. S.* 1831, p. 55. Himalaya.

18. *G. chrysopterus*; *Ianth. chrysoptera*, Gould, *P. Z. S.* 1835, p. 48. Bootan, Nepâl.

19. *G. erythrocephalus*; *Cincl. erythrocephalus*, Vigors, *P. Z. S.* 1831, p. 171, and figured in Gould's *Century*, pl. XVII. Nepâl.

20. *G. rufogularis*; *Ianth. rufogularis*, Gould, *P. Z. S.* 1835, p. 48: *Cincl. rufimenta*, Hodgson, *As. Res.* XIX, 148. Nepâl.

21. *G. ocellatus*; *Cincl. ocellatum*, Vigors, *P. Z. S.* 1831, p. 55, and figured in Gould's *Century*, pl. XV. Nepâl.

22. *G. squamatus*; *Ianth. squamata*, Gould, *P. Z. S.* 1835, p. 48, and figured in Jardine and Selby's 2nd series of *Illustrations*: *Cincl. melanura*, Hodgson, *As. Res.* XIX, 147. Nepâl.

23. *G. cærulatus*; *Cincl. cærulatum*, Hodgson, *As. Res.* XIX, 147. Nepâl.

24. *G. [phæniceus; *]* *Crateropus puniceus*, Nobis, *J. A. S.* XI, 180. Bootan, Darjeeling.

25. *G. lineatus*; *Cincl. lineatum*, Vigors, *P. Z. S.* 1831, p. 55. Nepâl?

26. *G. setafer*; *Cincl. setaferum*, Hodgson, *As. Res.* XIX, 148. Nepâl.

27. *G. imbricatus*, Nobis. Length eight inches and a half; of wing three inches; and middle tail-feathers four inches, the outermost an inch and a quarter less: bill to forehead (through the feathers) three-quarters of an inch, and to gape seven-eighths of an inch: tarse an inch and one-eighth. General colour olive-brown, darker on the crown, paler and a little inclining to rufous underneath; the rump and flanks dingy olive-green; and tail slightly rufescent above, its exterior feathers successively more broadly sub-terminated with dull black, having their extreme ends whitish: plumage of the head, neck, and back, slightly rigid to the feel, recalling to mind that of a Coucal (*Centropus*), which is also the case, in a slighter degree, in the preceding species, more particularly on its crown: the feathers of the crown and neck have shining black shafts, and, together with those of the nape, are slightly margined with dull olive-green; lores albescent, and the ear-coverts, sides of the neck, and under-parts, are more or less white-

* Mr. Jerdon informs me that this bird is the *Xanthocincla phanicea* of Gould, figured in his *Icones Avium*.

shafted, chiefly towards the tips of the feathers; primaries inconspicuously margined with grey, and secondaries with yellowish-olive: bill and feet olive-brown. Inhabits Bootan.

28. *G. cachinnans*; *Crateropus cachinnans*, Jerdon, *Madr. Jl.* No. XXV, 255 (1839), and there figured: *Cr. Lafresnayii*, Ad. Delessert, *Souvenirs d'un Voyage dans l'Inde*, pt. II, 30; and, it would appear, *Cr. Delesserti*, de la Fresnaye, *Rev. Zool. par la Soc. Cuvierenne*. Neilgherries.

29. *G. Delesserti*; *Crateropus Delesserti*, Jerdon, *Madr. Jl.* No. XXV, 256 (1839): *Cr. griseiceps*, Ad. Delessert, *Rev. Zool. par la Soc. Cuv.* 1840, p. 101, and Deless. *Souvenirs*, &c. pt. II, 29. Neilgherries.

30? and 31? In the catalogue of Dr. Royle's birds procured at Saharunpore and the neighbouring districts of the Himalaya, *G. leucolophus* is noticed as inhabiting the lower hills, and two other species are mentioned of which I have seen no description; viz. *melanocephalus*, on the hills, and *striatus*, met with in the Kheree Pass. Whether these be distinct from all the foregoing, remains to be ascertained.*

* In a list of specimens now on their way from Mr. Hodgson, I find three species mentioned, by the names *leucopoplus* (Quære *leucolophus*), *erythropterus*, and *subunicolor*; this last, with *setafer* and others, constituting Mr. Hodgson's division *Trochalopteron*, the propriety of adopting which name will depend on whether Mr. Swanson's *Crateropus Reinwardii* be considered admissible into the group, in which case it must bear the appellation *Crateropus*.

The specimens adverted to have since arrived, but *Tr. leucopoplus* (?) and *erythropterus* are not among them; and of *Tr. subunicolor*, a nestling specimen only is sent, of a species nearly allied to *Tr. erythrocephalus*, *chrysopterus*, and *affinis*, especially to the latter, but having a shorter and thicker bill than in that bird. In a nestling example of *Tr. chrysopterus* before me, the lunate black spots on the breast of the adult do not exist, beyond a mere trace of them on the sides of the breast; being the contrary of what is observable in the Thrush and various other groups, wherein the young are more mottled than the adults. Length of the immature *subunicolor* about nine inches, of the wing three inches and a half, and tail four inches; bill to gape seven-eighths of an inch, and tarse an inch and three-eighths. General colour greenish olive-brown, tinged with dusky on the head, and brighter greenish on the tertiaries and tail, the latter having a slight wash of aureous; exterior tail-feathers dusky with white tips, the latter successively increasing to the outermost; edges of primaries bright golden-yellow, as in *affinis*, but the narrow exterior edge of the outer primaries grayish beyond their emargination; lower-parts dull olive-brown: the dorsal plumage is slightly margined with black, in the adults probably as much so as in *squamatus*; and two or three new feathers growing on the breast are whitish towards the tip with a dusky margin, indicating that the under-parts of the adult would be thus mottled: bill dusky above, the under mandible yellowish except at tip; and feet brown. Nepal.

The only additional species which I at present know of, are four described from Western Africa by Mr. Swainson, and one discovered in Southern Africa by Dr. A. Smith :* there are doubtless, however, several more yet to be discovered in this country. Of those here enumerated, Nos. 3, 4, 6, 8, 12, 13, 14, 15, 17, 25, and 29, are desiderata in the Society's Museum; which contains only bad specimens of some of the others, as 22 and 23. The *Cincl. Nipalense*, Hodgson, as before noticed, has since been referred by that naturalist to his genus *Alcopus* (v. *Actinodura*, Gould); and now ranks as the type of his genus *Ixops*.

Leiocincla, Nobis. *n. g.* Intermediate to *Garrulax*, *Ixops*, and *Leiothrix*, the very elegant bird upon which I found this generic designation has the bill shorter than the head, moderately compressed, somewhat wide at base, the outline of both mandibles accurved, and the tip of the upper bent over that of the lower mandible, rendering the slight arcuation of the former more apparent: nostrils basal, their aperture a narrow slit at the inferior margin of the nasal membrane: gape furnish with a few long but feeble bristles. Tarse of mean length, or rather short than otherwise: the toes formed for perching, and claws of moderate size. Wings having the first primary half the length of the third, and the fifth, sixth, and seventh, equal and longest. Tail long and graduated. The plumage very copious, dense and of silky texture, especially on the crown and occiput, where the feathers are much lengthened.

L. plumosa, Nobis. Entire length about nine inches, of which the tail measures five, its outermost feathers two inches less; wings three inches and three-eighths; bill to forehead, through the reflected frontal plumes, three-quarters of an inch, and seven-eighths of an inch to gape; tarse an inch. General colour different shades of soft brown, passing into rufous and delicate cinerous-lake; the latter prevails on the lengthened feathers of the crown and nape, and upon the

The *Turdus canorus*, Lin., is referred to *Ianthocincla* by Mr. Strickland, in a list of Chinese birds published in the 'Annals and Magazine of Natural History' for September 1843. This is the *Baniakhbou de Bengale* of Buffon, who appears, however, to mix up two different species under this name, from Bengal and China respectively. I do not recognise the Bengal bird described by him, but may remark that the native name he cites is commonly applied to the Black-headed Oriole.

* *Crat. Swainsonii*, A. Smith, may be one, the figure of which I have not seen; but *Cr. Jardinii* of the same naturalist would seem to be a *Malacocircus*.

ear-coverts; forehead deep reddish-brown, and throat tinged with the same: back and rump a rich and less rufous brown than the forehead, the rufous much increasing in intensity on the medial part of the wings, especially on the basal portion of the primaries and on the coverts of the secondaries; the coverts of the primaries and inner webs of the winglet-feathers are black; primaries having their inner webs dusky, and the narrow outer webs of the three first albescent-grey without markings; the terminal half and successively more of the other primaries being beautifully barred with black on a pale rufescent-ashy ground, and the secondaries and tertiaries with narrower black bars on a more rufous ground, this colour however again weakening on the exposed tertiaries: tail somewhat dark ruddy-brown, all but its middle pair of feathers banded with weak dusky, and passing into the latter towards the tips, which are white, successively decreasing in quantity to the middle pair; underneath, the transverse bars are only seen towards the tips of the tail-feathers, becoming there very distinct, and ending in dusky-black, which contrasts with the white extreme tips. Under-parts much paler than the back, but softly tinted, and tinged with the predominating rufous hue. Bill light horny; and legs pale brown. The colours of this species recall to mind those of the Waxwings (*Bombycilla*), and are equally delicate. In the barred markings of its wings, the character of the crest, and other details of plumage, it manifests considerable affinity for *Ixops Nipalensis*; the feathers of which are however much less delicate and silky. Inhabits the vicinity of Darjeeling.

P. 181. My genus *Cinclidium* proves to be less allied to *Pellornium* than I had anticipated; and I now supply a figure of the species (*C. frontale*, Nobis), upon which it is founded. The bird is reported to be a fine songster, heard chiefly in the evening.

P. 183. *Pteruthius rufiventer*, Nobis. I described this species from a female example, and have now the pleasure of adding a notice of the plumage of the male. Length eight inches, of wing from bend three inches and five-eighths, and of tail three inches and a half, its outermost feathers an inch and a quarter shorter. Back and upper tail-coverts wholly deep ferruginous, as also the tips of the secondaries, of the longest tertiary, and of all the tail-feathers: head and nape, lores, ear-coverts, and infra-orbital region, deep black, glossed along the

edges of each feather ; throat, fore-neck, and breast, pure ashy ; and the rest of the under-parts, from the breast, a pale brownish-carneous, with a patch of golden-yellow on each side of the breast, bordering the grey : wings and tail wholly shining black, except the ferruginous tips before mentioned. The sexual diversity is accordingly considerable, the female having the upper-parts, wings, and middle tail-feathers, green, and only the upper tail-coverts ferruginous, together with the tips of the tail-feathers ; and the sides of the head grey, which margins also the feathers of the crown. Some nestling feathers intermingled on the crown of one female specimen, show that that part is also green, having slight black edges, in the young bird.

P. 184. *Indian Leiotrichanæ*. A Monograph of this group, by Mr. Hodgson, with additions and annotations by myself, is now awaiting publication.

Same page. *Parus flavocristatus*, la Fresnaye, *Mag. de Zool.* Janvier, 1837, apud Horsfield ; *Ibid*, 1838, apud Lesson, *Revue Zoologique par la Société Cuvierienne*, 1839, p. 42 : *P. sultaneus*, Hodgson, *Ind. Rev.*, April, 1837, p. 81. This, and the *Melanochlora Sumatrana*, Lesson, *Rev. Zool. &c.*, *loc. cit.*, appear now to me to be identical, my description of the latter in XI, 792, referring to the young. I have now before me four specimens from Nepâl and four from Singapore ; and there is no difference in the length of the wings and tail, in the size of the bill, nor in any other respect that I can perceive, further than that the mode of preparing the Singapore specimens makes them appear considerably smaller.

Same page. Mr. Hodgson has rightly instituted a genus *Alcurus* for the species which I described by the name *Tricophorus striatus*.

P. 186. *Chloropsis Hardwickii* is referred to *Chl. curvirostris*, Swainson, by M. de la Fresnaye, apud M. Adolphe Delessert, *Souvenirs, &c.*, pt. II, 23, where a figure is given of it : *Chl. auriventris*, *Mag. de Zool.*, Guérin, 1840, p. 17, may be added to the synonyms collated in *loc. cit.*

There are five species of this genus now in the Society's Museum, one of which appears to have been confounded with *Chl. aurifrons* ; a sixth also inhabits India.

1. *Chl. curvirostris*, Swainson, or perhaps *Hardwickii* has still the priority. This species has always more or less orange-saffron colour

on the abdominal region, which in old males occupies the entire under-parts from the breast, with the exception of a little green on the flanks posteriorly; these have also the tail and greater portion of the wing dark purple, the tertiaries and adjoining coverts only remaining green, and the flexure of the wing verdigris-blue: throat and fore-neck black, passing into dark glossy purple on the breast: a large brilliant smalt-blue streak from each corner of the lower mandible; and the head and neck tinged with yellow. In younger males, the purple of the wings commences on the smallest coverts, and there is sometimes an admixture of this hue upon the tail. Females have less orange-saffron on the abdominal region, which is more or less patched with this colour, and the throat and breast are green, with the moustache-streaks less vivid than in the male. Nepál, Bootan, Assam.

2. *Chl. aurifrons*; figured as *Chl. Malabaricus* in Messrs. Jardine and Selby's 'Illustrations of Ornithology,' as subsequently corrected by them in their Monograph of the genus. Has the crown brilliant orange, or saffron-red, the feathers rigid and glistening; throat wholly glistening smalt-blue; fore-neck black, surrounded by a yellow zone; wing-flexure verdigris-blue; and the rest green. Two specimens marked as female by Capt. Tickell differ in no respect from the male, excepting in being rather smaller, with the blue and glistening portion of the throat-feathers less developed. The young of both sexes have the forehead merely yellowish; the fore-neck bluish-green, surrounded by pale-yellow; the blue of the throat being confined, or nearly so, to a dull verdigris moustache; and not any of this colour at the base of the wing. Inhabits Bengal, Nepál, Arracan, and Central India (neighbourhood of Chyebassa).

3. *Chl. cæsmarhynchos*,* Tickell, *J. A. S. II*, 579; *Chl. aurifrons*, apud Jerdon. Similar to the last species, but having no trace of blue on the centre of the throat, which is pure black, separating two well defined moustachial streaks of brilliant smalt-blue; and there is also no yellow zone surrounding the black of the fore-neck. Female with the black of the fore-neck less extended, and surrounded by pale straw-yellowish; the same moustachial streaks as in the male, but not

* This name would appear, however, to be merely a misprint for *gampsorhynchus* of Jardine and Selby.

so bright; and no brilliant orange-colour on the forehead: rest as in *Chl. aurifrons*. This is decidedly distinct from the preceding species; and if, instead of reading "throat, part of cheek, and forehead, black," we insert the word *of* before "forehead," Lt. Tickell's description perfectly applies to the present bird, which has the part in question similar to that of *Chl. aurifrons*: he appears to have confounded it, however, with the latter, which alone is frequently (and, so far as I have seen, exclusively) sold in cages at Calcutta; and the specimens here described are likewise from Central India, though Lt. Tickell has sent examples of the preceding species from Chyebassa.* Peninsula of India.

In the three foregoing species, and I believe also in the next, the bill is slightly curved, slender, and tapers to a sharp point: whereas the two last have a very different form of bill, typified by that of *Chl. gampsorhynchus* (young male *Sonneratii*?), figured by Messrs. Jardine and Selby. The fifth is, however, somewhat intermediate.

4. *Chl. Cochinchinensis*; *Turdus C.*, Auct: *Melliphaga Javanica*, Horsf. "Male, with chin, throat, and gorge deep black, surrounded by a greenish yellow band, which extends through the eyes to the forehead; maxillary streak, hyacinth-blue. Female, with parts black in male of a light bluish-green, surrounded (as in male,) with yellowish band; maxillary streak light azure." Jerdon. Bill rather less elongated than in the last species. Inhabits the peninsula of India, and the Indo-Chinese and Malay countries.

5. *Chl. Malabaricus*. Considerably smaller than the others, the male having the wings and tail tinged with azure, in addition to the ordinary verdigris patch at the bend of the wing, which is unusually lustrous; head and neck wholly light yellowish, somewhat rufescent on the latter; throat and fore-neck black, surrounded by a pure light yellow zone, and a small short moustachial streak of brilliant smalt-blue. Female wholly green, except in having the blue moustachial streak, which is narrower than in the male; the throat but slightly flavescent; and there is no verdigris patch at the bend of the wing.† Young male similar to the female, except that the wings and

* I have recently received *Chl. cæsmarhynchos* from Midnapore, so that it may be presumed to be also occasionally brought alive to Calcutta.

† Mr. Eyton states that "the female differs from the male in having the markings less distinct." *P. Z. S.* 1839, p. 102.

tail are slightly (more or less) tinged with azure. Inhabits the Malay countries; and is doubtful, at present, as occurring in Malabar.

6. *Chl. Sonneratii*, J. and S.; *Phyllornis Mullerii*, Tem.; the female *Chl. zosterops* of the Monograph by Messrs. Jardine and Selby; and the young male apparently *Chl. gampsorhynchus* of the same. Adult male having the throat, loreal region, and intermediate space, intense black, with a narrow moustachial streak of smalt-blue; the bend of the wing greenish-verdigris in some, others having little or no trace of this. Female having the throat and orbits yellow, and a slight blue moustache. Inhabits Southern India and the Malay countries. Of seven adult specimens before me, two or three have the bill closely approximating that represented of *Chl. gampsorhynchus*.

A seventh inhabits the Malay countries — *Chl. cyanopogon*; *Phyllornis cyanopogon*, Tem.: with a short bill, only the chin black, and a long cœrulean moustache-streak.

P. 187. The bird which I designated *Heterophasia cuculopsis* is identical with Mr. Hodgson's *Alcopus* (olim *Sibia*) *picoides*, *J. A. S. VIII*, 38; but as this genus appears to correspond exactly with *Actinodura*, Gould, *P. Z. S.* 1836, p. 17, I must (provisionally at least) consider them as identical, in which case the following species would be comprised in it.

1. *Act. Egertonii*, Gould, *P. Z. S.* 1836, p. 18. Nepâl.

2. *Act. gracilis*; *Hypsipetes gracilis*, McClelland and Horsfield, *P. Z. S.* 1839, p. 159, which appears to me clearly referrible to this genus, from Dr. McClelland's drawing of it. Assam.

3. *Act. picoides*; *Sibia picoides*, Hodgson, *J. A. S. VIII*, 38; *Heterophasia cuculopsis*, Nobis, *Id.* XI, 187. Nepâl, Bootan.

4. *Act. nigriceps*; *S. nigriceps*, Hodgson, *loc. cit.* Nepâl, Bootan. *Same page.* The *Accentor* to which I applied the name *Himalayanus* with a mark of doubt, may be now termed *A. variegatus*; as the following species of this genus also occur in the Himalaya.

A. Nipalensis, Hodgson. Allied to *A. alpinus*, as indeed are both the others, yet this most so, though intermediate in plumage to that species and *A. modularis*. Length about seven inches, of wing three inches and three-quarters, and tail two and three-quarters; bill to gape five-eighths of an inch, and tarse fifteen-sixteenths of an inch. Newly moulted adults have the upper-parts nearly as in *A. modularis*,

but the dark colour predominating, and the striation of the head and neck obsolete, or very nearly so, these parts, with the ear-coverts and breast, being of an almost uniform dark brownish-grey; throat white, spotted with dusky-black, which forms two cross-bars on each feather, their extreme tips being greyish; belly and flanks bright dark ferruginous, mingled with the hue of the breast along the middle of the former; under tail-coverts dusky, tinged with ferruginous, and laterally margined with white: the feathers of the back are greyish-brown, with broad dark centres, or they may be described as blackish, with brown lateral margins, tinged with ferruginous towards and upon the scapularies: wings dusky-black, the tertiaries broadly margined with ferruginous, the other large alars slightly so, and all having a spot of this colour at the extremity of their outer edge; wing-coverts having a white spot at the tip of their exterior webs; and the small feathers near the bend of the wing coloured like the head: tail brownish-black, tipped with brown, the terminal spot of the inner web of each feather successively more albescent to the outermost; upper tail-coverts long, and brown with a dark central streak: bill dusky, the lower mandible yellow except at tip; and legs reddish-brown. In worn plumage, the margins of all the feathers have more or less disappeared, and what remains of them is faded in hue; the conspicuous white spots on the wing-coverts, and ferruginous margins of the tertiaries, being completely abraded, the former leaving a semi-circular sinus, as if artificially cut away. In this state of plumage, Mr. Hodgson has sent a specimen as distinct in species. The young have the clothing plumage of the usual flimsy texture, the under-parts coloured like the back, with no ferruginous on the belly; the spots on the wing-coverts are larger and less purely white; and the ferruginous on the scapularies and wing-coverts, dingy. Appears to represent *A. alpinus* on the Kâchar region of Nepâl.

*A. strophiatu*s, Hodgson. Size of *A. modularis*, and readily distinguished by its bright ferruginous breast and streak over the eye. Length about five inches and a half, of wing two inches and a quarter to two and a half, and tail two inches and one-eighth to two and a quarter; bill to gape five-eighths of an inch, and tarse thirteen-sixteenths of an inch. Upper parts much as in *A. modularis*, but the colours brighter and more contrasted, and the crown and neck uniform

with the back; a broad eye-streak, the first portion of which is white to beyond the eye, surmounting a ferruginous streak continued backward to the occiput; a semi-circle of the same surrounds the dusky ear-coverts, and the entire breast is also ferruginous; throat white, with dusky spots, forming a line descending from each angle of the lower mandible; belly and lower tail-coverts white with dusky streaks; wing-feathers dusky, margined with ferruginous, with an albescent spot at the tip of each covert; tail brownish, with dull rufous outer margins: bill black, and legs reddish-brown. *Nepâl.*

A. variegatus, Nobis, should follow *A. Nipalensis* in the series commencing with *A. alpinus*; and *A. strophiatu*s should, if I remember *A. montinellus* rightly, be placed next to that species.

P. 188. *Pitta nuchalis*, Nobis, is identical with *Hydrornis* (olim *Paludicola*) *Nipalensis*, Hodgson, *J. A. S. VI*, 103: but it is barely separable from the great group of *Pitta*, a monograph of which would be acceptable at the present time. The following is a slight contribution towards its effectuation.

In India, there appears to be only one species generally distributed, viz. *Pitta brachyura*, Auct., figured in Gould's Century. I kept a bird of this species for some time alive, but can remark little more than that it progressed by hopping, and that it is a remarkably silent species; though I am told that it frequently utters a screeching note in the wild state. Allied to it is a beautiful species common in the Malay countries, for which I have been unable to find a name, but can scarcely suppose it undescribed; viz.

P. Malaccensis? Nobis. Nearly similar to *P. brachyura*, but considerably larger, and everywhere much brighter-coloured; the wings much more largely marked with brilliant smalt-blue instead of verdigris-blue; the back a purer dark green; under-parts brighter fulvous; and belly and lower tail-coverts vermilion; under surface of wings black, without the white spot at the bend observable in *P. brachyura*, but the white patch on the quills much more largely developed, three of the secondaries being wholly of this colour.*

P. nigricollis, Nobis. Resembles the *P. strepitans*, Tem., of Australia,

* Found also, together with *P. gigas*, in Arracan, from which locality one of several specimens before me is remarkable for the unusual size of its bill, which measures an inch and a quarter to forehead and an inch and a half to gape.

except that the under-parts are bright sea-green, and that there is generally no trace of black on the centre of the crown. Length above seven inches, the wing four inches and a quarter to four and a half; bill to gape an inch and one-eighth. Crown dark rufous-brown, with occasionally some black on its centre; throat, sides of the head, and neck all round, black; bend of the wing and upper tail-coverts bright verdigris-blue; vent and under tail-coverts vermilion; a large white patch on the primaries; the back a fine glossy dark green, and under-parts lighter and more bluish green. Inhabits Assam, and the Malay peninsula.

P. rodogaster, Hodgson. I can only describe this from a wretched bad specimen. Nearly allied to the last, and upper-parts much the same, but less bright; the second range of wing-coverts largely tipped with white: a white transverse band also on the throat, and lower-parts dull brown, mingled with green, though I can detect no appearance of moulting. Perhaps only the young of the preceding species. Nepâl.

P. gigas, Temminck. The Society possesses a Himalayan example of what appears to be the young of this species. Length about eight inches and a half, of wing four inches and three-eighths, and bill to gape an inch and three-sixteenths. Crown and lower ear-coverts dull brown, the former black-centred; lores, upper ear-coverts and beyond them, and another streak below the ear-coverts, black, occupying only the tips of the feathers on the latter; throat brown: rest of the upper-parts uniform bright dark blue; bases of the primaries white underneath, and under wing-coverts towards the axillaries the same: breast and belly light blue, with a slight shade of green on the former and of lilach on the latter, and all marked with imperfect black bands on each feather, becoming entire on the sides of the breast and flanks.*

P. coccinea, Eyton, *P. Z. S.* 1839, p. 104. A gorgeous species, scarcely yielding the palm of beauty to the lovely *P. cyanura*: wings short, rounded as in that bird, and more bowed or hollowed. Forehead and over the eyes black; the crown, occiput, and nape, intense carmine; rest of the upper-parts fine dark glistening purple, with a

* A specimen from Arracan is perhaps a female: the tail and its coverts are nearly as bright blue as in the Himalayan specimen, and there is an admixture of this colour on the interscapularies; but the rest of the upper-parts, from the red occiput, are dull greenish; and the blue of the under-parts is also weaker.

splendid shine; a longitudinal band on the wing approaching to smalt-blue; throat rufescent-brown; the fore-neck and breast purplish with red tips to the feathers, forming spots on the breast; belly, flanks, and lower tail-coverts, deep red: bill dusky-horn; and legs appear to have been plumbeous. Length seven inches or more, of wing three inches and a half, and tail an inch and a half; bill to gape an inch and one-eighth, and tarse an inch and five-eighths. Malay peninsula.

P. 190. The *Dimorpha albogularis*, Nobis, should not have been referred to that genus of Mr. Hodgson, and is identical with *Muscicapa superciliaris*, Jerdon, *Madr. Jl.* XI, 16. With my *D. superciliaris** preceding it, and which must now receive another specific appellation (*rubecula* would suit), it might form a particular sub-genus of *Muscicapidæ*. [This I have since termed *Muscicapula*, as introduced between brackets at p. 939 *ante*, where four species are referred to it, all of which inhabit the vicinity of Darjeeling.]

Same page. Indian Redstarts. To the various species of oriental Redstarts enumerated, may be added

Phenicura leucoptera, Nobis. Size of *Ph. rutililla*, and much resembling in plumage *Ph. Reevesii*, but smaller and the wings much shorter than in the latter species; it is also generally similar to *Ph. rutililla*, but has no white on the forehead, which, with the crown, neck, and fore-part of the back, are ash-grey; the middle of the back is black, as are also the lores, ear-coverts, throat and breast; and the rest of the under-parts, with the rump and tail except the medial feathers of the latter, are bright ferruginous, the exterior web of the outermost tail-feather being marked with dusky; wings dusky, having a large white patch occupying the base of the secondaries and tertiaries; bill and feet black: according to season, the dorsal plumage is margined with brown edgings, the under-parts more slightly with greyish, and the wing-coverts with brown. The female I have not seen. Length about six inches, of wing two inches and three-quarters, and tail two inches and three-eighths; bill to gape five-eighths of an inch, and tarse three-quarters of an inch. Inhabits the Malay peninsula.

* This, however, has been just received from Mr. Hodgson, who refers it to his *Dimorpha*, and he had previously sent a third species of the group. *Muscicapa superciliosa*, Gmelin, must not be confounded with either of these.

Ph. Reevesii, Gray. A description of this species may not be unacceptable. It much resembles *Ph. ruticilla* except in its larger size, in having a conspicuous white wing-patch, and less white upon the forehead. Length six inches and a half, of wing three inches and a quarter to three and three-eighths, and tail two inches and seven-eighths; bill to gape eleven-sixteenths of an inch, and tarse seven-eighths of an inch. The white wing-patch is confined to the exterior margin of the basal half of the secondaries, whereas in the preceding species it extends over both webs of each feather. The female is nearly similar to that of *Ph. atrata*, but may be distinguished by its more puffy general appearance, the greyer and non-rufescent hue of its under-parts, and especially by the different relative length of the primaries, having the first short one more developed and the second less so, the difference between these being only an inch, whereas in *Ph. atrata* it is an inch and a half or nearly so. Inhabits Nepāl and Assam.

P. 191. *Phylloscopus* (Boiè) *reguloides*; *Phyllopneuste reguloides*, Nobis, *passim*. This well marked species is not uncommon in the vicinity of Calcutta during the cool season.* A male measured four inches and seven-eighths in length, by seven inches and a quarter across, wing two inches and a half, and tail an inch and seven-eighths; a female gave respectively four inches and a half, six inches and seven-eighths, two and three-sixteenths, and an inch and three-quarters: but the generality are intermediate. Upper mandible dusky, the lower yellow; and legs yellowish-brown tinged with plumbeous. The mesial streak along the crown is broader and more conspicuous than in the next species, particularly on the occiput where it widens and contrasts with dusky on each side. It is readily distinguished from the next by its greater size, brighter colour, the absence of any whitish border to the tertiaries, and by most of the tail-feathers having their inner web margined with white; also by the plumbeous tinge of its legs. The young, as in *Ph. trochilus* and *Ph. rufus*, have their under-parts much brighter yellow than in the adults, during their first winter, and assume the mature dress early in the new year.

Ph. modestus; *Regulus modestus*, Gould: *R. inornatus*, Nobis, *passim*. This species, also, one of the European *Aves rarissimæ*, figured by

* Perhaps it also breeds here, like the next; at least occasionally, as I obtained one so late as March 15th.

Mr. Gould from the only specimen then known, which was procured in Dalmatia, and of which a second individual has since been met with in England (vide *An. Nat. Hist.* II, 310), is by no means rare in the neighbourhood of Calcutta during the cool season and for some time afterwards. The mesial streak along the crown is not always well defined, and it often requires some trouble to make this appear distinctly in the preserved skins. Scarcely any trace of it exists in the old stuffed specimen which I styled *Regulus inornatus*; mistaking the species, as Mr. Gould had previously done, for a member of that genus: but I have since examined numerous fresh specimens, and do not in the least now hesitate in assigning it to *Phylloscopus* of Boiè, or the restricted *Sylvia* of various modern British Ornithologists. The average size of a male is four inches long, by six to six and a quarter across, wing two inches, and tail an inch and a half. Upper mandible dusky, the lower yellow except at tip; and legs rather pale brown, without any plumbeous tinge: irides dark. In the published admeasurements of the British-killed specimen, the length of the tail is given as but an inch and one-sixteenth, which is the only dimensional discrepancy noticeable from the specimens before me; but it is probable that this is a misprint for an inch and seven-sixteenths, the more especially as the wings are stated to reach within three-quarters of an inch of the end of the tail, which is the case with those obtained here. From the described brightness of the yellow parts, I am inclined to think that the specimen killed in Northumberland was a bird of the year (shot in September), whereas mine are all adults, having comparatively dull plumage (as in various other species of *Phylloscopus*, *Ph. sibilatrix* constituting an exception). The crown and upper-parts have, in the worn plumage, but a slight greenish cast, which increases on the scapularies, and particularly on the lower part of the back and rump, which are tolerably bright greenish; superciliary streak whitish, but very slightly tinged with yellow, and chiefly so anterior to the eye; adjoining this is an inferior dusky streak posterior to the eye, and on a level with that organ; mesial line of the crown generally faint, and often scarcely discernible: the markings on the wings are nearly those of a *Regulus*, presenting two whitish cross bars slightly tinged in general with greenish-yellow, the posterior broader and formed by the tips of the greater coverts,

and the anterior by those of the lesser coverts; the tertiaries also are edged externally with whitish, and the primaries and secondaries more slightly bordered with the same, or, in some specimens, with olive-green; towards the posterior pale cross-band of the wing, however, is generally (not always) a well defined dark patch, caused by the secondaries being there unbordered, and which represents the blackish patch on the wing of *Regulus auricapillus*: the tail-feathers are not internally edged with white as in the preceding species; and the under-parts are dingy greyish-white, a little tinged with lemon-yellow, this colour appearing more conspicuously about the ear-coverts. The affinity which this species bears to the last will help to indicate its true systematic station, being strictly, as I may repeat, a *Phylloscopus*, and not a *Regulus*. Its habits, too, are solitary, and not gregarious as in the latter genus: and its song-note may be described as nearly similar to that of *Ph. sibilatrix*, but considerably weaker.*

Six other species of this genus occur in the vicinity of Calcutta. One I have already described as *Ph. fuscatus*, (*J. A. S. XI*, 113), and of this I have not hitherto obtained a second specimen.† It is at once distinguished by its comparatively large size, and prevalent brown colour. Three others of which I have also obtained as yet but one example of each, may be described as

Ph. nitidus, Nobis. Resembles *Ph. sibilatrix*, but is smaller in all its proportions, and has the entire under-parts, with the lower tail-coverts, tinged with yellow. Bill carneous-dusky, the lower mandible pale; and feet light brownish, tinged with yellow on the toes. This

* March 7th. A nest of this species has been brought to me, with the pair of birds attached to it. It is an elegant structure, pendent from a twig of guava, and was placed at a considerable height from the ground: being of a domed form, with two apertures, one in front above the middle, having a distinct overhanging canopy, the other on one side behind, placed rather higher up; the upper-part is attached throughout its breadth to the twig. The body of the nest is constructed of a fine and soft vegetable fibre, like fine tow, closely interlaced to the thickness of half an inch; and this forms the internal lining: the domed part is much less substantial, though sufficiently strong behind, where the lower part is supported. Outside are affixed a number of bits of bark, spider-cocoons, and a variety of other substances, recalling to mind the external lining of the nest of the European Bottletit (*Mecistura caudata*); which latter nest is fully double the size, but its single orifice is scarcely so large. There were no eggs in this nest, the outer lining of which is not completely finished. Both birds have their plumage very much worn, especially the male, the mesial coronal streak of which is only slightly indicated in part.—*E. B.*

† I have recently procured others, both of this and of *Ph. tristis*.

bird is of a much livelier green than any of the others, equally so with the European *Ph. sibilatrix*, and it is perhaps the species referred to *sibilatrix* in Royle's list: its under-parts are unsullied pale yellowish, brightest about the breast; and there is a pale bar crossing the wing, formed by the tips of the larger coverts of the secondaries. Length of a male four inches and three-quarters, by seven inches and a half across; wing two inches and five-eighths; tail two inches; bill to gape five-eighths of an inch; and tarse three-quarters of an inch.

Ph. magnirostris, Nobis. Allied to *Ph. trochilus*, but distinguished by its larger size, its considerably larger bill, and more developed rictorial vibrissæ; also by the less brownish cast of its upper-parts, in lieu whereof is a slight wash of fuscous, by the cinerascient tinge of those below, and the darkish cinerascient hue of the crown, which contrasts with the more greenish colouring of the back: the wings, too, have the small first primary more developed, and the second less so, measuring an inch from the tip of one to that of the other, whereas in *Ph. trochilus* this measurement is an inch and a quarter. Length five inches and three-eighths, by eight inches across; of wing two inches and three-quarters; and tail two inches and one-eighth: bill to frontal feathers seven-sixteenths of an inch, and five-eighths of an inch to gape: tarse three-quarters of an inch. Bill dusky above, fleshy horn-colour at base of lower mandible; legs light plumbeous, having a yellowish tinge. The entire upper-parts are uniform dark olive-green, the medial larger coverts of the wings being tipped with albescent-greenish; there is a narrow but strongly marked pale yellowish streak over the eye, and the lower ear-coverts are partly of the same hue; throat and breast tinged with grey, mingled with faint yellowish, the rest of the under-parts paler and whitish on the middle of the belly. The colour of the legs will help to distinguish it from *Ph. trochilus*. The shikaree who shot it informed me that it sung prettily, and on my imitating the well remembered note of *Ph. trochilus*, he assured me that the song of this bird was quite different.

Ph. tristis, Nobis. Closely allied to *Ph. rufus*, but devoid of any greenish or yellowish tinge on the plumage, except on the fore-part of the wing underneath, and faintly margining the quills and tail externally; legs and claws black, or rather dull black (much darker

than in *Ph. rufus*), except the under-surface of the toes which is yellow; bill also blackish, tinged with yellow at base of lower mandible, and the gape also yellow. Length four inches and a half, by six inches and a half across; of wing two inches and one-eighth; tail an inch and three-quarters; bill to gape half an inch; and tarse seven-sixteenths of an inch. General colour greyish-brown, beneath paler and albescent, a faint rufous tinge on the breast, and no trace of yellowish on the lower tail-coverts, nor elsewhere than as described.*

Ph. viridanus, Nobis; *Phyllopneuste rufa*, apud nos, XI, 191.† Allied to *Ph. rufus*, but of a weaker and much less brownish green above, and the under-parts much more albescent; the tarse shorter, but the length of wings and relative length of primaries the same: the colour of the tarse is also different, being of a greenish-leadene hue by no means dark. Length four inches and five-eighths to four and three-quarters, by seven inches and a quarter across; of wing two inches and three-eighths, and tail an inch and seven-eighths to two inches: bill above three-eighths of an inch from forehead, and nearly five-eighths from gape; tarse eleven-sixteenths of an inch.‡ Irides dusky. Bill dusky horn-colour above, the under mandible yellowish except towards the tip. Colour of the upper-parts a light dull olive-green, having a greenish cast when compared with those of *Ph. rufus*; of the under-parts greenish-albescent; and a narrow pale greenish streak over the eye: wings and tail light dusky, with greenish margins to the tertiaries and tail-feathers, and a slight whitish bar on the wing formed by the tips of the larger coverts. The note of this bird is weak, and is expressible by the sound *tiss-yip*, frequently uttered, but never repeated a number of times in continuous succession like the much louder *tsih-tseh* of the

* There is the faintest possible greenish tinge on the upper-parts of some that I have since procured, which colour is most developed on the margins of the secondaries, towards their base.

† *Ph. affinis*, of a catalogue of birds obtained in the vicinity of Calcutta, published in the 'Annals and Magazine of Natural History' for August and September, 1843.

‡ This species varies considerably in size. Of two recent examples before me, one measures five inches and one-eighth by seven and a half; wing two inches and a half; tail two inches; and tarse three-quarters of an inch: while the other is only four inches and a half by six and five-eighths; wing two inches and a quarter; tail an inch and three-quarters; and tarse eleven-sixteenths of an inch. I observe also that *Ph. modestus* varies a great deal in size. An unusually large one just obtained measures four inches and a half by seven inches across; wing two inches and a quarter, tail an inch and three-quarters; and tarse eleven-sixteenths of an inch.

European species. It is very numerous in the vicinity of Calcutta during the hyemal months, and is likewise common in Nepál.

Ph. lugubris, Nobis. Closely allied to the last, but averaging a rather larger size, with tarsi measuring fully three-quarters of an inch, instead of barely eleven-sixteenths of an inch, and they are likewise slightly darker than in the other. The whole upper-parts are also of a darker shade, particularly the head which is much darker and tinged with dusky; throat, breast, and flanks, dashed with ashy-grey, having traces of yellowish, and altogether this species is conspicuously of a darker and more fuscous shade than the preceding one. Its note again is different, and much louder than that of the last. Also common near Calcutta during the cold season; and a Madras specimen of the young has been forwarded by Mr. Jerdon. The young or rather second plumage of this species is much yellower than the adults, as in the corresponding garb of *Ph. trochilus* and *Ph. rufus*.*

Culicipeta, Nobis, *n. g.* General structure of *Phylloscopus*, but having a narrow Flycatcher's bill and armature of rictus, the ridge of the upper mandible angulated, and the breadth of the bill evenly attenuating.

C. Burkii; *Sylvia Burkii*, Burton, *P. Z. S.* 1835, p. 153; *Muscipapa bilineata*, Lesson, *Rev. Zool. par la Soc. Cuv.* 1839, p. 104. Length four inches and seven-eighths, by six inches and a half in alar expanse;

* Having lately received British specimens of *Ph. trochilus* and *Ph. rufus*, I have rewritten some of the above descriptions; and a long while subsequently to my first describing most of the species noticed in the present report, a packet of skins of this genus was received from Mr. Hodgson, amongst which I think I correctly recognised the *Ph. trochilus* and *Ph. rufus*, but *Ph. sibilatrix* was not among them, which species, together with the two preceding British kinds, are mentioned in the catalogue of Dr. Royle's birds procured at Saharunpore and its vicinity. Mr. Hodgson sent seven species of *Phylloscopus*, including the *modestus*, to which are to be added my *reguloides*, *nitidus*, *magnirostris*, *lugubris*, *tristis*, and *fuscatus*; making thirteen Indian species, and Dr. Royle's *sibilatrix*, if different from my *nitidus*, should constitute a fourteenth. Mr. H. also sent the European *Phyllopneste hippolais* (*Sylvia hippolais* of Temminck, or a closely allied species), and the *Culicipeta Burkii* above described. Four of these species of *Phylloscopus* have the central coronal mark, and the specimen of *modestus* sent was in new plumage, with a more strongly marked mesial coronal streak than usual, thus resembling the figure in Gould's 'Birds of Europe.' All were temporarily returned, so that I have not them now by me for reference.

In a paper since forwarded by Mr. Hodgson, the species with central coronal streak are separated from the others; but I much prefer to arrange them as slight divisions merely of the same genus.

of closed wing two inches and a quarter, and tail an inch and three-quarters; bill to frontal feathers three-eighths of an inch; and tarse eleven-sixteenths of an inch. General colour bright yellowish olive-green above, and a full siskin-yellow underneath; over each eye a broad black streak reaching to the occiput, leaving the middle of the head greenish, more or less flanked with ashy-grey; tail dusky, its middle feathers flanked with the hue of the back, and the inner web of the outermost tail-feather white nearly throughout, as also the terminal half of that of the next: some have a dull yellow cross-band on the wing, formed by the tips of the coverts of the secondaries, which in others is obsolete. Irides dark. Bill dusky above; underneath, with the legs, pale brownish yellow, more or less bright, and darker on toes. This pretty little bird is not uncommon in the neighbourhood of Calcutta during the cold season.

Same page. Genus *Cinnyris* [or rather *Nectarinia*, which Mr. G. R. Gray, and since Sir W. Jardine, have shewn to be the prior appellation. The volume on Sun-birds in the 'Naturalist's Library,' by the latter gentleman, has just reached me, and a perusal of it has led me to rewrite the remarks I had to offer on this group*]. Of the elegant section with graduated tails, whereof the two middle feathers are prolonged considerably beyond the rest, the following Indian species occur.

1. *N. Goalpariensis*, Jardine; *Goalpara Creeper*, Latham, *Gen. Hist.* IV, p. 221, pl. XXIV; *Certhia Goalpariensis*, Royle, *Ill. Him. Bot. &c.*: *Cinnyris Vigorsii*, Sykes, *P. Z. S.* 1832, p. 99: *N. Seheriæ* (?), Tickell, *J. A. S.* II, 577: *C. miles*, Hodgson, *Ind. Rev.* 1837, p. 273: erroneously, it would appear, assigned by me on former occasions to *N. mysticalis*, Tem., vide XI, 107. A gorgeous little bird, having the throat, fore-neck and breast, intensely brilliant carmine, with a glossy violet stripe on each side, from the corner of the lower mandible to more than half-way down the neck: ear-coverts, sides and hind-part of the neck, back, scapularies, and smaller wing-coverts, a darker sanguineous: forehead and crown of the head, together with the upper tail-coverts, dark shining metallic green, more or less glossed with purple: rump bright yellow: middle tail-feathers externally purple towards the base and at the tip, the rest shining bottle-

* In a letter just received from the author, *N. calcostetha* of his synopsis of the *Nectarinidæ* is identified with *N. insignis*.

green; margins of the other tail-feathers similar, to a greater or less extent: the rest of the wings, with the occiput, dull brownish green; and below the breast, the same but lighter: bill horn-colour at base, the terminal half of the upper mandible, and nearly all the lower, paler; legs brown. "The female and young," observes Mr. Hodgson, "wear a sombre russet robe instead of the flaming scarlet of the male; their cap is not burnished, nor have they the splendid moustache; and the central rectrices are neither pointed nor prolonged beyond the series of the rest.* Length of the male six inches, by six and a half in extent, and a quarter oz. in weight." Wing from bend two inches and three-eighths, and middle tail-feathers three inches: bill from forehead three-quarters of an inch, in a straight line; and tarse half an inch.

This splendid bird appears to be common in the Tenasserim provinces, and also in Nepâl, being much rarer, or perhaps local, in central and southern India. Col. Sykes, in his catalogue of the birds of the Deccan, remarks, that "it inhabits only the lofty trees of the dense woods of the ghats." Mr. Jerdon has not been successful in meeting with it; but Lieut. Tickell procured a single one "near Seheria in Borabhûm, flitting about the low willow-bushes in the dried bed of a stream. — It has no song, but a shrill chirp." The description given by that gentleman entirely accords with specimens before me, except that he assigns four inches as the length, which is probably a misprint for six inches. Dr. Royle figures it as one of several tropical birds that visit northern India and the Himalaya during the rains, though at least one of its companions in the same plate is strictly Sub-Himalayan: neither his coloured figure, however, nor that in the 'Naturalist's Library,' makes any approach to the brilliancy of nature.

1. a. *N. Lathamii*, Jardine, *Nat. Lib., Orn.*, Vol. XIV, 233-68. "We possess a specimen of a Sun-bird from some part of Continental

* Evidently the *C. concolor* of Col. Sykes's catalogue, defined as "*C. viridivivacea, alis caudaque saturatioribus, corpore subtilius pallidior. Longitudo corporis, 4 unc.; cauda 1. Irides intensè rufo-brunneæ:*" to which is added — "As four specimens obtained by Col. Sykes were all females, and as they were met with in the same locality as *C. Vigorsii*, *C. concolor* may be the female of that splendid species; but the difference in the size, form, and aspect of the bird, independently of colour, is opposed to this" (certainly not): "they were never seen together. This bird has the outline of *C. mahrattensis*. The specific appellation *concolor* is given provisionally."—*P. Z. S.* 1832, p. 99.

India," writes Sir W. Jardine, "closely allied to *N. Goalpariensis*, and also to the *Certhia Siparaja* of Sir Stamford Raffles's catalogue. From the Goalpara Sun-bird it differs in a slight general modification of the tints of the plumage, in the yellow of the rump being much deeper, and in the coronal patch, upper tail-coverts, and tail, being steel-blue instead of metallic green, and in the tail being shorter and more regularly graduated. Sir Stamford's bird is from Sumatra; no mention is made of the yellow rump, while, in the catalogue appended to that gentleman's memoirs, *N. mysticæ*, Tem., from Java, is quoted. A comparison of the birds may serve to distinguish them. The entire length is four inches and two-fifths; that of the bill to the forehead three-fifths of an inch. [*N. Seheriæ*? Tickell.] Above the forehead to the line of the eyes is steel-blue, with a play of colour; the upper tail-coverts and edges of the tail-feathers, except the outer, are of the same tint, and the tail itself, which is nearly black, has a very strong gloss of bluish-purple; the back and sides of the neck, cheeks, back, and lesser wing-coverts, are rich brownish-red: the lower part of the back and rump are very deep gamboge-yellow, almost Dutch orange, and following the red of the back we have the same lengthened plumes we saw in the last, of a dark greyish oil-green, and which can completely cover the yellow patch; the wings are umbre-brown, feathers edged with a paler tint and oil-green. Underneath, we have the maxillary stripes running upon the sides of the neck, inside-half of the feathers black, the exterior rich violet, the chin, fore-part of the neck and breast, bright scarlet-red; the remaining under-parts dull greyish oil-green. Bill umbre-brown, slightly paler on the maxilla.

"As stated, we do not know the locality of the specimen we have described, and in the collection of the Zoological Society there is one similar, and bearing out the distinctions from *N. Goalpariensis* we have pointed out, but the locality of which is also unknown."

On comparison of this description with several specimens of *N. Goalpariensis*, I am constrained to doubt very much the distinctness of *N. Lathamii*, and would suggest that it is perhaps a female *Goalpariensis* in masculine attire. There is indeed generally a greater or less admixture of steel-blue, with the glossy bottle-green of the cap and sometimes the upper tail-coverts of the latter, and still more upon the tail itself, as noticed in my description.

2. *N. ignicauda* ; *Cinnyris ignicauda*, Hodgson, *Ind. Rev.* 1837, p. 273 : *C. rubricaudata*, Nobis, mentioned in *J. A. S.* XI, 192 : *N. phænicura*, Jardine, *Nat. Libr.* Mr. Hodgson thus describes this species, in its post-nuptial garb, certain species of Sun-birds being well known to assume a dull-coloured plumage after breeding. "Above, olive-green ; beneath, together with the rump, yellow : chin, cheeks, and front of the neck, blue-grey with a greenish wash ; breast dashed with fiery-red ; caudal plumes and their upper coverts intense igneous-red ; remiges and rectrices, internally, dusky-brown : seven inches long, whereof the tail is three inches and three-quarters, its two central plumes passing the rest by an inch and three-quarters : weight half an oz., or considerably larger than most of the others. The female is smaller, and has her caudal plumes of the same hue with the body above, and merely fringed with fiery-red ; but the coverts are igneous, and the breast is touched with fire, as in the male : the tail wants the prolonged plumes of the male, as in all the long-tailed species.

"*C. ignicauda* is distinguished, specifically, by the comparative straightness of its bill, which is, indeed, distinctly curved, but less so than in the allied species ; it scarcely reaches the average excess of the genus, or one-third more than the head."

A male and female have recently been sent by Mr. Hodgson, the medial tail-feathers of the former being no less than five inches in length. It otherwise agrees with the above description, except that the olive-green plumage of the upper-parts is not completely put forth, several brilliant red old feathers being intermixed with it. I have now no doubt of its identity with my *C. rubricaudata*, of which I took the following description from a Darjeeling specimen. Upper-parts as in *N. Gouldii*, except that the tail-coverts are scarlet, and the long middle tail-feathers crimson, the crown also being violet unmixed with lake-purple ; and under-plumage resembling that of *N. Nipalensis*, but having more reddish flame-colour, and less diffused, on the centre of the breast, while the throat and fore-neck have no greenish gloss, but are intensely rich dark shining purple along the middle, and brilliant violet laterally. No painting could express the splendour of this magnificent species. The back is of a burnished and richer crimson than that of *N. Goalpariensis*, or of *N. Gouldii*, from both of which this species differs in possessing none on the smaller coverts of the

wings, which, with the scapularies, are glossless green, as in *N. Nipalensis*; from the latter it differs, and resembles *N. Gouldii*, in the crimson of the back extending up the hind-neck to the occiput; there is a yellow band, as in most of the allied species, across the rump; the lores and ear-coverts are glossless black, mixed with green on the latter; and the greater wing-feathers, and their larger coverts, dusky, edged with greenish, passing into rufous on one of the secondaries on each side; the outer tail-feathers have their inner webs dusky, the outer red, and tips a little greenish: under-parts bright yellow, passing into greenish on the flanks, vent, and lower tail-coverts, and deeply tinged with gorgeous flame-colour on the centre of the breast. Bill black, and but very little curved; legs brown. Length six inches and one-eighth, of which the bill measures three-quarters of an inch to forehead, and middle tail-feathers three inches and one-eighth;* the latter do not taper at the end: wing two inches and a quarter; and tarse nine-sixteenths of an inch. On the neck are two or three unmoulted feathers, which are greenish like the scapularies.

Mr. Hodgson's female is wholly olive-green, paler and yellowish beneath; upper tail-coverts and central pectoral spot igneous-red; and tail slightly tinged with the same, its form graduated, but the middle pair of feathers scarcely passing the next.

Sir W. Jardine's *N. phænicura*, from Sylhet, would seem to be identical, except that the chin and centre of the throat and neck are described to be deep velvet-black, with two broad maxillary stripes steel-blue with violet reflections: unfortunately, I have not a specimen wherewith to compare his description.† What this naturalist, however, considers to be the female, is evidently the male in corresponding plumage to that described by Mr. Hodgson.‡ It would appear to be a rare species in Nepâl, and is also rare in the vicinity of Darjeeling.

3. *N. labecula*; *C. labecula*, McClelland and Horsfield. *P. Z. S.* 1839, p. 167. "*Punicca, gula, pectoreque nitidissimis; capite, plumis*

* These middle tail-feathers could not have been full grown: *vide* in following note.

† In a beautiful collection of Darjeeling specimens just arrived, from which I am kindly permitted to make a selection, there are three beautiful males of this species, which quite agree with my description, and are also evidently identical with Sir W. Jardine's *N. phænicura*. In all of these the middle tail-feathers are growing.

‡ I perceive that this was subsequently remarked by Sir William in his Synopsis; or at least that he considered it to be a young male.

scapularibus, caudaque metallicè aureo-viridibus; alis fuscis viriditinentibus; subtùs cana. Body three inches, tail two inches long:" from Assam. I have seen a drawing of this bird, which pertains to the present group, and is obviously distinct from all the others here described.

4. *N. Nipalensis*; *Cin. Nipalensis*, Hodgson, *Ind. Rev.* 1837, p. 273. Nearly allied to *N. Gouldii* figured in the 'Century of Himalayan Birds,' but larger, with the dark scale-like feathers of the crown continued down the back of the neck, and glossed with greenish, sometimes a little bronzed, instead of violet; the same remark applies to the tail and its coverts, and to the throat; and there is also no red on the smaller wing-coverts, while that of the back is darker and quite glossless; middle of the breast tinged with flame-colour, of which there is seldom more than a faint trace in *N. Gouldii*, and often not any, while *N. ignicauda* has much more of it. The present species is remarkable for the comparative length and looseness of the feathers of its hind-neck, which have broad scale-like tips that, together with the crown, occiput, throat, upper tail-coverts, long and tapering middle pair of tail-feathers, and the outer margins of the other tail-feathers, are brilliantly glossy dark steel-green; lores and ear-coverts black, the latter glossed with purple; scapularies and margins of the wing-feathers olive-green, as in *N. ignicauda*, which the breast and under-parts resemble except in having less flame-colour, which is more diffused; yellow of the rump brighter than in most of the others: bill black, and legs dusky-brown. Length five inches and three-quarters, of which the middle tail-feathers measure two inches and five-eighths, and the bill from forehead three-quarters of an inch; wing two inches and one-eighth; and tarse nearly five-eighths of an inch. The female is rather smaller, and uniform olive-green above, faintly tinged with rufous; below paler and yellower: tail shorter, with its middle pair of feathers scarcely elongated beyond the rest. "The young males," according to Mr. Hodgson, "are earthy-brown on all the glossed parts of the mature males. So also in [*N. Goalpariensis*], and (as I suspect,) in all the gorgeous species." Habitat Nepâl and Sikim: very abundant about Darjeeling.

5. *N. Gouldii*; *C. Gouldii*, Vigors, *P. Z. S.* 1837, p. 44; Gould's *Century*, pl. LVI. Rather smaller than any of the preceding, with

the sides and hind-part of the neck, the back, scapularies, and smaller wing-coverts, deep crimson, as in *N. Goalpariensis*; crown, ear-coverts, and throat, rich glossy violet, or purple, according to the light; a brilliant shoulder-tuft of the same; and the upper tail-coverts, lengthened middle pair of tail-feathers, and outer margins of the other tail-feathers towards their base, also similar; rest of the tail dusky, the three outermost feathers with albescent tips, as is likewise the case in *N. Nipalensis*, and with the next species; yellow band over the rump as usual; wings beyond the smaller coverts dusky, margined with olive-green; the breast and belly bright yellow, with sometimes a faint tinge of flame-colour about the middle; bill blackish, and legs dark brown. Length five inches and a half, of which the bill to forehead measures nine-sixteenths of an inch, and the long tail-feathers three inches; wing from bend two inches and one-eighth; and tarse half an inch. The only female I have seen was deficient in the tail, and was everywhere dull olive-green, paler on the under-parts, deeper and slightly aureous on the back, with a somewhat reddish cast on the margins of the primaries and secondaries. This beautiful species is rare at Darjeeling, where it is much sought after by collectors, who have currently styled it the "Beauty of the Hills," a name by which it will be recognised by many.

6. *N. Horsfieldi*; *Cin. Horsfieldi*, Nobis, mentioned in *J. A. S.* XI, 107. Upper-parts very similar to those of *N. Nipalensis*, only without the red, a slight trace of which, however, appears on the lower part of the sides of the neck; the scale-like nuchal feathers, also, are not so broadly glossed as in *N. Nipalensis*, and have more of a purplish shine; the under-parts, too, differ only in having merely the slightest trace of flame-colour, as in some specimens of *N. Gouldii*, and which as in that species may often be wanting altogether: the whole back, scapularies, and margins of the wing-feathers, are golden olive-green, and the yellow on the rump (as in *N. Nipalensis*) is very broad and conspicuous; the ear-coverts are glossed with purple, and the lores and sides of the neck are unglossed black: bill dusky, and legs brown. Length five inches and a half, the bill to forehead measuring three-quarters of an inch, and the long middle tail-feathers two inches and a half; wing from bend two inches and one-eighth; and tarse exceeding half an inch. Female unknown. The only specimen

observed was contained in a collection partly from the Himalaya and partly Malayan.*

7. *N. saturata*; *Cin. saturata*, Hodgson, *Ind. Rev.* 1837, p. 273: *C. Assamensis*, McClelland and Horsfield, *P. Z. S.* 1839, p. 167: *N. Hodgsonis*, Jardine. *Nat. Libr.* Size of *N. Gouldii*, but having a considerably larger bill, and predominating deep black plumage, which colour extends over the throat, breast, and fore-part of the belly, the lores, ear-coverts, and sides of the neck, and on the wings and rump, upon which last there appears to be more or less trace of the ordinary yellow band in different specimens, but never much; scapularies and interscapularies dark sanguineous; crown, occiput, and back of the neck, brilliant steel-blue approaching to violet, and a streak of the same down each side of the front of the neck, commencing at the corner of the lower mandible and gradually widening; upper tail-coverts, lengthened middle tail-feathers, and margin of the next pair of tail-feathers towards the base, glossy steel-blue, like the head; flanks, hind-part of the belly, and lower tail-coverts, dull olive-green; rest of the tail black, as is also the bill, and feet brown; the greater wing-feathers are margined with dark olive. Length six inches, of which the bill to forehead rather exceeds three-quarters of an inch, and the tapering middle tail-feathers measure three inches and a quarter; wing from bend an inch and one-eighth, and tarse posteriorly half an inch. Extent, according to Mr. Hodgson, seven inches, and weight a quarter of an ounce. This species inhabits Nepâl, the vicinity of Darjeeling, and Assam.

Upon the various allied long-tailed *Nectariniæ* inhabiting the Indian Archipelago, I have no information to contribute. Of those with even or but slightly rounded tails, there appear to be only two species in Bengal, which are pretty generally distributed throughout India proper.

N. Zeylonica; *Certhia Zeylonica*, Linnæus: *Cin. sola*, apud Jerdon, and of my former reports: *C. lepida* (?), apud Sykes.† Very abundant in the neighbourhood of Calcutta throughout the year,

* The donor of that collection has just informed me that the specimen in question formed part of a consignment which he received from the hills, *i. e.* the Himalaya. Can it be a variety only of *N. Nipalensis*?

† *C. lepida* of Latham is evidently the *Anthreptes Javanica* of recent authors; while *C. lepida* of Sparman is regarded in Griffith's work as the female of *N. sperata*.

the male retaining its bright colours at all seasons. The female is dull-green above, with a slight rufous tinge, and cinnamon-coloured edgings to the greater wing-feathers; tail dusky-black, and under-parts less bright yellow than in the male, having the throat and fore-neck albescent. The young, in nestling garb, resemble the female, but have the throat and flanks as yellow as the breast, a streak over the eye more distinct and yellow, and dark hazel irides. This appears also to be the commonest species of the genus in peninsular India, but I have never seen it in collections from the Himalaya, nor is it included among the Nepalese species by Mr. Hodgson. It has a weak shrill chant, delivered in the same key as the song of the British *Accentor modularis*; and frequently emits a low weak chirp, that recalls to mind the analogous note of a *Regulus*, or of *Certhia familiaris*. The natives here take them with bird-lime, and after plucking out the wing-primaries to prevent their fluttering, tie them to a stick, and carry rows of them thus about for sale. These may be kept alive for several days on merely sugar and water, and I have heard one sing that had had no other diet for some days; but raspberry or other fruit-jam is a better kind of food on which to keep these nectar-feeding birds. The members of the present genus, however, by no means confine themselves to a regimen of the kind, and I have taken so large a spider from the stomach of *C. Mahrattensis*, as to have wondered how it could have been swallowed. Mr. Hodgson, indeed, has even declared that he "entirely doubts their alleged nectarinean diet" (*Ind. Rev.* I, 273); but this is going rather too far, as the facts already stated tend sufficiently to shew.

According to Mr. Walter Elliot, the present species "builds a hanging nest with an entrance near the top, opening downwards"; and such is the form of a beautiful fabric before me, which I am assured is the production of this bird: it is attached, nearly throughout its length, to a small thorny twig, and is of an elongated pear-shape, composed chiefly of soft vegetable fibres very densely and neatly interwoven; on the outside are some coarser strips of grass-leaves, scalings of bark, &c., but the substance and internal lining are constructed of the softest fibres only, which are reflected over the lower portion of the entrance so as to fasten down its rim, imparting thus a neatness of finish to this part of the structure; above the floor of the entrance is an

overhanging roof or canopy, formed by the lining of the upper third or more of the nest being made to project semi-circularly over the orifice, and then finished externally like the rest with coarser material, and some bits of leaves and the like to disguise the nature of the fabric.

N. minima; *Cin. minima*, Sykes, *P. Z. S.*, 1832, p. 98. A diminutive species, allied to the last, from the upland forest-jungles of southern India. The Society is indebted for a specimen to Mr. Jerdon.

N. Mahrattensis; *Certhia Mahrattensis*, Latham: *Cin. orientalis*, Franklin: *C. epauletta*, Hodgson, *Ind. Rev.* I, 272: *C. curruccaria*, apud Sykes, post-nuptial plumage. Visits the neighbourhood of Calcutta only in the cold season, when it is not uncommon. On its arrival, both sexes are clad in the plumage referred to *N. curruccaria* by Sykes; and before they leave, all have more or less completely assumed their nuptial dress, which also is alike in both sexes. In Nepál it is probably a summer visitant only; and it extends westward to the Indus, and southward to Ceylon, but I have never seen it from the eastern side of the Bay of Bengal.*

N. lotenia; *Certhia lotenia*, Lin.: *C. polita*, Latham, Jerdon: *C. purpurata*, Vieillot, Shaw. Allied to the last, but distinguished by its superior size, its much larger and more curved bill, and brown under-parts from the breast, also by the admixture of green in its glosses.

* I have lately procured the young of this species, which is dark olive-green above, and tolerably bright yellow on the under-parts; wings dusky, with brownish margins to the tertials; and tail black, its exterior feathers tipped with whitish, and the outermost pair largely so, extending far up their outer webs. To this plumage would succeed the purple breeding dress; and the *Cin. strigula*, Hodgson (*Ind. Rev.* 1837, p. 272), would seem to be founded on a specimen which had begun to throw out the purple feathers as "a long central stripe from chin to breast," just as is shewn by another specimen before me, which however is moulting into the purple garb from the non-breeding livery of the adult, this last being, I apprehend, Mr. Hodgson's female *strigula*. The following is that naturalist's description. "Above dark olive-green, below bright yellow, shoulders and a long central stripe from chin to breast, brilliant deep blue; alar and caudal plumes dusky or black, the latter tipped and margined laterally in the extremes, with white; a paler line over the eyes, and darker one through them: bill dusky; legs black. The female is earthy-brown above, and greenish-yellow below. She is without gular stripe or shoulder-spot. Size and characters of [*N. Mahrattensis*]."

Since writing the above, I have found a skin referred by Mr. Hodgson to the female of his *strigula*, but which has no trace of "greenish-yellow" on the under-parts, these being uniform dull albescent: so far as I can make out, from the condition of the specimen, I should judge it to be an old female *Mahrattensis* in the non-breeding plumage.

Alleged breeding plumage of the female as unlike that of the male as in *N. Zeylonica*, wherein it would differ remarkably from *N. Mahrattensis*. Inhabits Southern India and Ceylon.

N. jugularis, Vieillot, apud Jardine; or a closely allied species, perhaps distinguishable upon actual comparison from the Philippine bird cited. Length about four inches and one-eighth, of wing two inches and one-sixteenth, and tail an inch and one-eighth; bill to forehead five-eighths of an inch, and tarse under half an inch. Colour of the upper-parts dull olive-green, brightening a little on the rump: beneath moderately bright king's-yellow; and the axillary tuft intense yellow with flame-colour anteriorly: throat and front of the neck very dark glossy purple, margined laterally and at the gorget with bright steel-purple, below which is a trace of a narrow cross-band of dark red. Bill and feet dusky. Female similar, except in wanting the axillary tuft, and having the throat and fore-neck yellow, like the rest of the lower-parts; but one of three specimens (probably an old female, rather than a male in *undress*,) has the middle of the throat and front of the neck dusky, flanked with yellow. All have the tail blackish, and its outermost feathers tipped with purer white than is usual in this genus, this successively decreasing in quantity on the two or three next. Common in the Tenasserim provinces.

Certain species with straighter and less prolonged bills constitute the division *Anthreptes*, Swainson. *Nect. Javanica*, Horsfield, is cited as an example, and it is from this species that the diagnosis is evidently drawn up; for in the Tenasserim and Malayan species formerly referred by me to *rectirostris*, Auct., but which would now appear to be different, the bill is still shorter and less curved, the upper mandible is at least as high as broad at base, where its upper ridge is continued sharp to the forehead. I will designate it

Anthr. phœnicotis.* Length four inches and a quarter, of which the bill to forehead measures half an inch, and the tail an inch and three-quarters; wing two inches and one-eighth; and tarse eleven-sixteenths of an inch. Upper parts a glossy bronzed green, including the crown and wing-coverts; upper tail-coverts glossy green without the bronzing; rest of the wings and tail dusky, the feathers of the latter

* I see that Temminck has already applied to it the identical specific name, terming it *Nectarinia phœnicotis*, p. c. 108, f. 1, and 338, f. 2, apud *Dict. Class.*

margined with shining green, and the secondaries and tertiaries slightly with faint purple: throat, fore-neck, and breast, a light ferruginous; the rest of the under-parts bright yellow: ear-coverts amethystine, passing into ruby-red on the sides of the neck, and separated from the hue of the throat by a stripe of glossy purple; bill dull black, and legs appear to have been greenish. The female has the upper-parts gloss-less olive-green with a tinge of grey; breast as in the male, but scarcely so bright; and under-parts dull greenish-yellow; alars and caudals margined with aureous-green. The young resemble the female, except in the more downy texture of their feathers, and the chestnut colour of the fore-neck and breast is reduced to a slight tinge. Inhabits the Tenasserim provinces, and appears to be common at Singapore.

In the same range of territory *Anthr. Javanica** abounds; and in the southern portion of it occurs a species which much approaches in its plumage the *Arachnothera*. I shall term it

Anthr. nuchalis; the female indicated, but not described, as *A. macularia*, *J. A. S.* XI, 107. Length about five inches and a half, of wing two inches and five-eighths, and tail an inch and seven-eighths; bill to frontal feathers above three-quarters of an inch, and but little curved; tarse five-eighths of an inch. General colour of the upper-parts a rich dark olive-green, the tail dusky, its outer feathers successively more broadly margined with whitish, chiefly on their inner webs; the base of the hind-neck, and the upper tail-coverts, (of the male only,) brilliant steel-blue: under-parts streaky, each feather broadly marked with dark olive-green along the middle, and laterally margined with pale sulphur-yellow, brightest on the belly: bill dusky horn-colour; and legs leaden-brown. Singapore.

The two species assigned to *Anthreptes* in Mr. Eyton's list of a collection from the Malay peninsula, published in *P. Z. S.* 1839, p. 105, would seem, from the length of bill, as well as from their size, to be rather referrible to *Arachnothera*. This group consists of Sun-birds of comparatively large size and sombre greenish colouring, with a very long and but moderately curved bill, and nostrils (apparently) closable at will by the impending membrane. They appear, like the last, to be peculiar to tropical Asia and its Archipelago, and are regarded by Mr. Hodgson as the most highly typical form of the family. Such are—

* *Certhia lepida* of Latham.

1. *A. magna* ; *Cin. magna*, Hodgson, *Ind. Rev.* 1837, p. 272 : *A. inornata* (?), Tem., apud Horsfield, *P. Z. S.* 1839, p. 167*. "Length eight inches by eleven and a quarter, and weight an inch and three-quarters": bill to forehead an inch and five-eighths; wing three inches and a half; tail two inches and one-eighth; and tarse above three-quarters of an inch. Upper-parts greenish-yellow, each feather having a central black streak; lower-parts yellowish-white, similarly striated: tail with a subterminal black band, and an albescent spot beyond this on the inner web of its outer feathers: "bill dusky; legs, feet, and claws, bright orange", the hind-toe very large and strong. Inhabits Nepai and Assam.

2. *A. (?) flavigaster* ; *Anthreptes flavigaster*, Eyton, *P. Z. S.* 1839, p. 105. Size of last, and length of bill the same. "*Capite, dorso, pectore colloque cinereo-viridibus; corpore subtùs flavo; alis, caudâ tectricibusque alarum, brunneis; rostri mandibulâ superiore atrâ, inferiore flavâ; pedibus brunneis.*" Inhabits the Malay peninsula, where termed *Chichap Rimba*.

3. *A. (?) modesta* ; *Anthreptes modesta*, Eyton, *P. Z. S.* 1839, p. 105. Length six inches and a half, of which the bill measures an inch and a quarter; tarse five-eighths of an inch. "*Vertice, dorso, alis, caudâque viridi-olivaceis hâc singulis pennis mediis brunneis, illâ præpillatâ atro; corpore subtùs viridi, singulis pennis in mediis obscuris; rostro pedibusque brunneis.*" Inhabits the Malay peninsula, where denominated *Chichap Nio*.

4. *A. chrysogenys*, Tem. *pl. col.* 388, fig. 1; *Certhia longirostra*, Raffles, *Lin. Trans.* XIII, 299, but not of Latham and others. Length about six inches and three-quarters, of which the bill measures an inch and three-eighths to forehead, and the tail two inches; wing two inches and three-eighths, and tarse eleven-sixteenths of an inch. Colour of the upper-parts dull olive-green, the alars and caudals margined with yellowish: under-parts lighter, slightly washed with yellow, and very faintly striated; belly and under tail-coverts moderately bright yellow; the tibial feathers brown: cheeks beneath the eye naked of feathers; a bright yellow tuft commencing at the gape, and orbital mark of the same above the eye: bill dusky, the edges of the upper mandible

* At least Dr. McClelland's drawing of what I have reason to suspect is the identical specimen referred to, represents the present species.

yellowish, as appear also to be the legs and toes. Inhabits the Malay countries.

5. *A. inornata*, Tem., *pl. col.* 84. ; *Cin. affinis*, Horsfield, *Lin. Trans.* XIII, 166 ; *C. longirostris*, Jerdon, *Supplement to Catalogue*. Length five inches and three-quarters, of which the bill to forehead measures sometimes an inch and a half, and tail about the same ; wing two inches and a half to two and five-eighths, and tarse five-eighths of an inch. Colour of the upper-parts olive-green more or less flavescent ; the crown darker, with scale-like feathers, merely green-edged : under-parts dull greenish-albescent, passing into brighter pale yellow on the belly : tail-feathers slightly tipped with whitish, chiefly on their inner-webs, forming a spot which is more distinct to the outermost. Bill dusky above, the lower mandible whitish underneath ; and legs plumbeous. Inhabits the Malay countries, spreading northward to Arracan ; and Mr. Jerdon has obtained one specimen of it in the Mysore district, bordering the Neilgherries.

6. *A. longirostra*, Tem. ; *Certhia longirostra*, Lath., *Ind. Orn.* 299 ; *Cin. longirostra*, Horsfield : figured in Griffith's Edition of the *Régne Animal*, VII, 392. " Ashen-olive above ; alar quills brown, edged with olive ; caudal blackish, white-tipped ; throat and front of neck white ; rest [of under-parts] clear yellow. Java."

7. *A. latirostris*, Nobis. Length six inches, or nearly so ; of wing two inches and seven-eighths ; and middle tail-feathers an inch and three-quarters, the outermost above three-eighths of an inch less : bill to forehead an inch and a quarter ; being shorter and much broader than in *A. inornata*, but tapering to its extremity, and also more curved : tarse five-eighths of an inch. Upper-parts bright yellowish olive-green, the lower pale ashy-green, and obscurely striated ; lower tail-coverts tipped with whitish : tail more graduated than usual in this group, with a subterminal dusky band, all but the medial two pairs of tail-feathers having a well-defined pure white spot near the extremity of the outer web, successively larger to the outermost. Bill dusky-brown above, the lower mandible pale ; and feet yellowish. Inhabits the vicinity of Singapore.

To conclude this notice of Indian *Nectarinidæ*, there remains to be considered the genus *Dicaeum*. Of this there are two Indian species remarkable for the absence of vivid colouring.

D. concolor, Jerdon, *Madr. Jl.* XI, 227. Length about four inches, of wing two inches and one-tenth, and tail an inch and one-eighth; bill to forehead seven-sixteenths of an inch, and tarse half an inch. Above, brownish-olive; beneath, dull greenish-white: bill and legs brownish-cinereous: sexes alike. Frequents the highest branches of lofty trees on the Malabar range and Neilgherries: and

D. Tickellia, Nobis; *Nectarinia minima*, Tickell, *J. A. S.* II, 577. Length three inches to three and one-eighth, by six inches across; of wing an inch and three-quarters to one and seven-eighths, and tail seven-eighths of an inch; bill to forehead three-eighths of an inch; and tarse seven-sixteenths of an inch. Above ashy-olive, paler beneath; wings and tail darker: bill pale flesh-coloured, with dusky tip; and legs leaden-brown; irides dark: sexes alike. Habits similar to the last, emitting frequently a loud chirping for its size. This bird is common about Calcutta,—Mr. Hodgson has sent it from Nepâl,—and Captain Tickell mentions it to be common in saul-jungle in Borabhúm and Dholbúm.*

Among the gay-coloured species, there is at least one in Bengal; viz.

D. erythronotum, Auct. Not rare in the vicinity of Calcutta, and occurs in Assam and in the Tenasserim provinces; but I am unaware of its existence in the Indian peninsula. In Tenasserim the *D. cantillans* is likewise numerous; and further south, in the Malay peninsula, Mr. Eyton notices, besides *D. cantillans*, *saccharinum* and *cruentatum* (Horsf.), a new species described by him as *D. ignicapilla* in *P. Z. S.* 1839, p. 105.

Certain species with shorter bills constitute Mr. Hodgson's division *Myzanthe*, of which the Australian *D. hirundinaceum* is characteristic. Allied to that species is

M. ignipectus, Hodgson. Length about three inches and a quarter, of wing an inch and seven-eighths, and tail an inch and one-eighth; bill to forehead five-sixteenths of an inch, and tarse three-eighths of an inch. Colour of the upper-parts black, with a mingled purplish and green gloss, or, in one Darjeeling specimen before me, they might be termed glossy dark green; under-parts pale buff, with a vermilion patch occupying the greater portion of the breast in the male: the

* Mr. Jerdon has also just obtained a specimen in Southern India.

female is without this, and has the upper-parts glossless olive-green : beak blackish, the base of the lower mandible white in the female ; and legs dusky. Inhabits Nepal and Bootan.*

I may notice here a beautiful little Nepâl bird lately sent by Mr. Hodgson, which hardly seems to me to belong strictly to the *Nectarinidæ*, though it is evidently a soft-billed honey-sucker, and I know not what else to approach it to. Mr. Hodgson styles it

Myzornis pyrrhoura. The bill of the specimen is mutilated of its extremity, but would appear to have been slightly curved and pointed, moderately slender, depressed, but the ridge of the upper mandible distinctly angulated ; nostrils almost closed by an impending scale ; and the gape furnished with some delicately fine vibrissæ of moderate length : tarse longer than the middle toe with its claw ; toes of mean length, the outer and middle basally connected ; claws moderately curved, that of the hind toe much larger than the others ; wings much graduated, having the 4th, 5th, 6th, and 7th primaries subequal, and the 3rd shorter than the 8th : tail even : plumage soft, dense and copious, very puffy over the rump, and the feathers of the head scale-like, but not rigid. Length about four inches and a quarter, of which the bill probably exceeds half an inch from the forehead, and the tail measures an inch and a half ; wing two inches and three-eighths ; tarse thirteen-sixteenths of an inch ; and hind-toe and claw nine-sixteenths of an inch. Colour a fine lively green, becoming bright emerald-green on the scale-like feathers of the forehead and crown, which have well defined black centres ; lores deep black, continued to beyond the eyes : under-parts paler and tinged with verdigris-grey, having a slight rufous cast on the throat ; lower tail-coverts bright yellow : wing-coverts and tertaries green like the back ; primaries black, the first eight having white tips, and all but the graduated outer primaries having their exterior edge partly white ; secondaries margined with rufous and then with white, except towards their tips, whereon also they have a terminal white spot ; tail dusky, washed with greenish, its feathers having

* In the article *Souimanga* by M. Drapiez, of the *Dict. Class. d' Hist. Nat.*, several species are mentioned which are not enumerated in Sir W. Jardine's *Synopsis* of the *Nectariniæ* ; and some of these are assigned to Bengal, or to India, (the latter a very vague term as currently employed, being not unfrequently synonymous with what is aggregately called "the East"). I much question, however, if any of these, supposing them to be really distinct, appertain to India proper.

their outer webs dull red to near the tip: bill dusky-horn, and legs apparently have been yellowish-white. Inhabits Nepâl.

To another nectar-feeding family — the *Meliphagidæ*, I refer the genus *Zosterops*, which is most extensively represented in Australia, where this family is so largely developed. One Indian species — *Z. Maderaspatanus*, would appear to be tolerably common in most parts of the country, from Nepâl to Ceylon, and is numerous also to the eastward of the Bay of Bengal, but I have not yet obtained it in the vicinity of Calcutta. A species from the Mauritius, which I refer to *Motacilla Madagascariensis*, Gmelin, has the bill longer and distinctly incurved, and the tongue long and dichotomously subdivided at its extremity, so as to form a tolerably large brush, as usual (if not constant), among the *Meliphagidæ*. To this family, the genus *Chloropsis* (p. 955, *et seq.*, *ante*.) is generally referred, and Mr. Hodgson inclines to place with it his *Heterornis*, (olim *Cutia*), and even his *Ixops* (vide p. 948, *ante*), but *Heterornis* at least I prefer to range near the *Timaliæ*.

Returning now, after so long a digression, to the catalogue of Darjeeling birds, I have to rectify, at

Page 192, *Linota saturata*, Nobis. This is identical with Mr. Hodgson's *Carduelis Nipalensis*, *As. Res.* XIX, 157, but now typifying his division *Procarduelis*. Of true *Carduelis*, there are two species upon the Himalaya allied to the European Goldfinch,—viz. *C. caniceps*, Vigors, figured in Gould's *Century*; and *C. Burtoni*, Gould, *P. Z. S.* 1839, p. 90; and one belonging to the Siskin group,—the *C. spinoides*, Vigors, which is also figured in Gould's *Century*.

P. 193. *Pica megaloptera*, Nobis, was previously described by M. Adolphe Delessert, in the *Revue Zoologique par la Société Cuvierienne*, 1840, p. 400, and again in his *Souvenirs d'un Voyage dans l'Inde*, pt. II, 30, by the name *P. Bottanensis*. The Society has lately procured a specimen of *P. vulgaris* shot on the Chilian Andes; and another common Indian bird from Peru, the *Ibis falcinellus*. I have reason to believe that *Pica Bottanensis* is the species of Magpie so abundant in Afghanistan: but a specimen brought from Chusan by Dr. Cantor was veritable *P. vulgaris*.

P. 194. *Ampeliceps coronatus*. This bird has lost the corneous sheathing of its bill, but the bone was blackened, and the deception is

by no means obvious: sides of the face naked; and I now think the bird may be safely ranged in *Gracula*, v. *Eulabes*, Cuvier, vide p. 178 (*bis*), *ante*.

After the foregoing corrections and emendations, my paper on Darjeeling birds still contains fifteen presumed new species, of which thirteen have been received from that locality; viz. *Indicator xanthonotus*, *Bucco Franklinii*, *Xiphoramphus* (olim *Xiphirhynchus*) *superciliaris*, *Paradoxornis ruficeps*, *Cinclidium frontale*, *Pteruthius rufiventer*, *Alcurus* (olim *Tricophorus*) *striatus*, *Accentor variegatus* (olim *Himalayanus*?), *Turdus mollissimus*, *Chaitaris grandis*, *Muscicapula rubecula* (*Dimorpha superciliaris*, *passim*), *Phylloscopus reguloides*, and *Linota fusca*: of the remaining two, the *Gracula*? (olim *Ampeliceps*) *coronatus* is most probably from Tenasserim; and *Timixos meruloides* is perhaps Australian. Mr. Hodgson has subsequently sent specimens from Nepâl of *Bucco Franklinii*, *Pteruthius rufiventer*, *Alcurus striatus*, *Turdus molissimus*, *Muscicapula rubecula*, and has informed me of the occurrence there of *Phylloscopus reguloides*.

I remain, Sir,

Your's obediently,

ED. BLYTH.

Appendix.—I have such a multitude of new species of Birds to describe, and there are so many more groups of them which I think I can elucidate, at least as regards their Indian species, that, notwithstanding the great length of the foregoing Report, I shall take the present opportunity to relieve myself of some portion of this constantly increasing *cumulus*.

Genus *Buceros*. The various descriptions of Hornbills to which I have access are, for the most part, highly unsatisfactory and perplexing, for which reason I shall contribute my mite towards the elucidation of the species of this group. Those of India are as follow:—

1. *B. cavatus*, Shaw, apud Gould, in *Century* (not a good figure); also apud Jerdon, *Madr. Jl.* Vol. XI, 37, where the following is correctly described from Mr. Elliot's notes: *B. homrai*, Hodgson, *As. Res.* XVIII, pt. II, p. 169 *et. seq.*; with coloured figure and views of the casque at different ages: Dr. Horsfield, however, in his catalogue of Dr. McClelland's Assamese birds (*P. Z. S.* 1839, p. 164), notices that the *Calao à casque concave* of Levaillant, according to Shaw's

description and specific character, differs in various particulars from the present species, and mentions that there are specimens of the latter from Sumatra in the Hon'ble Company's museum. It is also found in suitable districts throughout India (though not, that I am aware of, in Bengal), is frequent in the Tenasserim provinces, and the Society possess specimens from Assam and Arracan. It does not appear to be subject to any variation of plumage, either sexual or according to age ; but there are some differences in the colouring of the bill and casque of the sexes, as noticed by Messrs. Hodgson and Elliot, and also of the irides, which in the adult males are intense crimson, and in the females and young hoary.

Not having Levaillant's plates to refer to, I have no means of forming an opinion respecting his *Calao à casque concave*, further than can be derived from the conflicting descriptions of Shaw and others, though founded on those plates ; but as his Rhinoceros Hornbill is erroneously represented to have the tail black with a white tip, instead of white with a black cross-band as in the Homrai, I conclude that his plates of the present species are equally untrustworthy, and feel justified in following Gould and others in retaining the name *cavatus* for Mr. Hodgson's Homrai, which, together with *B. rhinoceros* as above indicated, is the only species of its respective subtype that appears to have been verified up to the present time.

The following details shew the confusion that has arisen from Levaillant's figures, which were doubtless made up from imperfect and perhaps *faultily restored* specimens. Stephens, in his continuation of Shaw's *Zoology* (XIV, pt. I, 80), unites the *B. bicornis* and *B. cavatus* of Shaw, assigning Sumatra as the habitat, wherein I presume that he follows Temminck. In Griffith's edition of the *Régne Animal* (VII, 417), and also in the second (French) edition of that work by its illustrious author (I, 446), the *B. bicornis*, Levaillant, pl. VII, is stated to be the adult female, of which *B. cavatus*, id. IV, is the middle-aged male ; to which is added that plates III and V represent "altered individuals." The uselessly brief description annexed in Griffith's work is as follows : — "Black with white patch on second quills ; protuberance forming a double horn : Philippine Islands." And there is a figure of the bill and casque, assigned to *bicornis*, in Griffith's work, Vol. VII, plate to p. 435, which might pass for

the Homrai, but has the lateral edges of the casque prolonged in front to an extent which I have never seen an approach to on the part of the Indian species, wherein they are usually, if not always, truncated, though it is possible that they might so grow out in captive individuals. Mons. Drapiez, in the *Dict. Class. d'Hist. Nat.* (Art. *Calao*), suggests that *B. cavatus*, Cuv. and Lev., may perhaps be no other than *B. cristatus*, Vieillot, figured in the supplementary plates to that work, No. XXIII; but this is quite out of the question, and I shall revert to the consideration of the latter species presently.

M. Drapiez, however, describes *B. bicornis*, Lev., Pl. VII and VIII, as a distinct species, differing altogether from *cristatus* and decidedly from the Homrai, stating, that the under-parts and lateral caudal feathers are white, and omitting all mention of any white, or rather fulvous-white, on the hind-head and neck. Inhabits the Philippines and China. Shaw, also, describes the *B. bicornis*, Lev., Pl. VII, and VIII, to have *the upper part of the breast, belly, thighs, and vent-feathers*, white; but the tail to be crossed in the middle, *except on the two middle feathers, with a white bar*: and he asserts it to be a native of India and the Indian isles; though most assuredly there is no species exhibiting such a coloration in India proper. His *B. cavatus*, Lev., III, IV, V, and VI, is stated to have the face and chin black, and the neck pale ochre-coloured, — so far as in the Homrai; *but the whole remainder of the plumage black* (very doubtful, certainly as regards the tail), and he adds a description which obviously refers to the young of some other species, as applicable to the immature state of this one. He also considers *B. hydrocorax* to be the young *cavatus*, in which opinion, however, he is not followed by Stephens.

Lastly, Shaw gives, as a variety of his *B. bicornis*, the species described by Cameli in the *Philosophical Transactions*, Vol. XXIII, (1702-3), p. 1394; but there is a widely different species (from the Homrai at least) in the Society's museum, which satisfactorily accords with the description by Cameli, and is clearly identical with Vieillot's *cristatus* as figured in the supplementary volume of plates to the *Dict. Class.*; apparently differing only from that figure in having the thighs ferruginous, and the primaries, together with their coverts and the winglet, fulvous-white,—at least on one side, the other having only the three first primaries, and some of their coverts, of that colour,

the rest being blackish. Cameli's specimen is described to have had the primaries fulvous. This is accordingly a somewhat variable species, subject to have the wings more or less fulvous or fulvous-white, instead of brown-black: *au reste*, the Society's specimen has the upper-parts of a dusky, greenish olive-brown; the face to beyond the eyes, and the crown immediately behind the casque, black; belly also black; the remainder of the head and the entire neck deep ferruginous; thighs pale ferruginous; and tail wholly fulvous-white: bill and casque dull coral-red, the terminal half of the former dark and livid, and a slight admixture of this upon the casque. Length nearly three feet, of wing sixteen inches, and tail thirteen inches; bill to gape six inches, and casque five inches, the latter produced backward far over the crown; the shape of it is inflated, and flattened above, narrowing to a point anteriorly, which however does not protrude forward, the greatest breadth being nearly two inches, and there are no transverse grooves either upon the casque or on the bill itself.

The figure cited of this species is rude (the feet not being represented as *syndactyle*), but decisive as regards the specific characters; the upper-parts being coloured brownish-black, the belly black as in the Society's specimen, and the thighs and vent of the same fulvous-white as the primaries of the latter. But the description in the *Dict. Class.* varies in several particulars, representing the upper-parts to be black, but *the under-parts* with the tail-feathers, fulvous-white; upper mandible yellow, red at its point, and surmounted by a casque rounded laterally, much produced backward, and *creusé en gouttière ouverte par devant*; hence the suggestion of M. Drapiez that this species may be *B. cavatus*, but there is no tendency to such a structure apparent in the Society's specimen, which however may be from comparative youth. The total length is given as three feet (French), and that of the bill seven inches. The females and young are stated to be wholly black, which is improbable as concerns the tail.

The same sexual disparity of plumage occurs in several allied species, whereof the males only are more or less marked with rufous; and both sexes are characterized by having a naked and brightly coloured, inflatable, gular skin. At the head of these may be placed—

2. *B. Nipalensis*, Hodgson, *As. Res.* XVIII, pt. I, 178, — the female, with a coloured figure of this sex: the male having the plumage of the entire head, neck, and breast, bright ferruginous, and that of the

thighs, belly, and vent, ferruginous-bay.* The Society possess fine specimens of both sexes of this large species from the Munneepore hills, and Dr. Pearson has a male from the vicinity of Darjeeling, where others have been met with. It has merely a slight bulge in place of a casque, and the upper mandible only is marked with a series of broad transverse grooves, six or eight in number, which appear, with the entire corneous substance of the beak, to be pushed forward from behind, by a constant increment at the base of the beak, and to be successively worn away anteriorly; the same is very obvious in various other species of Hornbill, and the inference deducible from this fact is, that the beak-sheath of birds generally, like their claws, and other modifications of cuticle, continue to grow at base and to be worn away at the extremity, as familiarly exemplified (at least as regards the growing) by the human hair and nails, and in a more or less obvious degree by all analogous productions.

Next follow several species very closely allied together, the males either resembling in plumage the *B. cassidix* figured in Griffith's work (Vol. VII, pl. to p. 434), or having the head and neck uniformly bright rufous, as in the *Calao de Waygiou* (*B. ruficollis*, Vieillot), figured in one of the plates to Labillardière's Voyage, and also the *B. cristatus* (ante); approaching in this to *B. Nipalensis*: the females of all (so far as known) have the head and neck black; and excepting *B. cristatus* and apparently some immediate congeners to that species, the casque is transversely plaited, and the same naked, inflatable, coloured gular skin exists as in *B. Nipalensis*. Such are—

B. pucoran (?), Raffles, obscurely indicated in *Lin. Trans.* XIII, pt. II, p. 293; this being doubtless either the present or the next species, but most probably the present one; and the gular skin is stated to be yellow: *B. ruficollis*, apud nos, ante, p. 176. Male having the medial part of the crown and the whole occiput and nape dark rufous bay, or deep maronne, and the sides of the head and neck, with the front of the latter, glistening yellowish-white,—precisely as in the figure cited of *B. cassidix*, only that the maronne colour is more developed on the occiput and nape than is at least represented in that figure, and forms the usual crest in this genus: all the other parts are greenish-glossed black, except the tail which is buffy-white. Bill yellowish-white, the basal por-

* The same sexual diversity of colouring obtains in the nestling plumage.

tion of both mandibles dark reddish-brown laterally, with a series of narrow, transverse, whitish ridges, nearly similar to those of *B. cassidix*; the casque is scarcely elevated above the outline of the rest of the upper mandible, but is broad and flat above, having a series of narrow transverse whitish plaits, the intervals between which are nearly filled up with a brownish substance, so that the profile is almost even, and towards the front is worn quite so. As compared with Labillardière's figure of *B. ruficollis*, the casque of the present species is less elevated, the plaits are much narrower and closer, and do not reach so far as half way along the mandible; the ridges on the sides of the bill itself afford another distinction from both that species and the next, and approximate the present one to *B. cassidix*. Length above three feet, of the wing nineteen inches, and tail ten inches and a half; bill to gape seven inches and a half, and with casque three inches high, the latter nearly two inches broad. Inhabits Sylhet and the Tenasserim provinces.

B. plicatus (?), Shaw; *B. subruficollis*, Nobis, ante, p. 177. Entirely resembles the last species in its plumage, having the sides of the head and neck (in the male) more or less deeply tinged with golden-saffron: but the size is much inferior, though the wings and tail being proportionally longer, the difference in actual admeasurements is not great, though that of the weight would be considerable; the casque is also much more elevate and highly convex, instead of being flattened above; the plaits on it more resembling those of *B. ruficollis*, except that they are considerably more raised than in that species, though far less so than in *cassidix*, and the foremost incline close over the bill as in *ruficollis*; there are also, as in *ruficollis*, no lateral transverse ridges at the basal part of the mandibles, which is a further distinction from *cassidix* and (presumed) *pucoran*. Length about thirty-two inches, of wing sixteen and a half, and tail nine and a half; bill to gape six and a half, and with its casque nearly three inches high, of which the latter occupies a full inch; it is also broad behind, becoming gradually narrower to the front, whereas that of *pucoran* (?) is much more uniform in its breadth throughout. Likewise an inhabitant of the Tenasserim provinces, where apparently very common.

This would seem to be the *B. plicatus* of Shaw, said to inhabit Ceylon, which I much doubt; and I certainly do not believe that it

would ever have a black tail with white outer feathers, as Shaw mentions to be the case sometimes (this being characteristic of *B. Malabaricus*, the young of which Cingalese species was probably here confounded with the present one). Stephens annexes, as synonyms of *B. plicatus*, the *B. undulatus*, Shaw, and *B. Javanicus*, Shaw. The latter is described to have the head "pale rufous," whilst in seven male specimens of the present species before me, the head is invariably very dark rufous-bay, or deep maronne: *B. undulatus*, also from Java, is described to have, "at the lower part of the neck, between the shoulders, a moderately large patch of red-brown, adding a considerable ornament to the plumage of that part"; the present bird has nothing of the kind: the female *Javanicus* is stated to be "somewhat smaller, and destitute of the reddish-brown patch between the shoulders."

This may also, rather than the preceding species, be the Sumatran *puoran* of Raffles, which is stated to have a yellow gular skin: that of *undulatus*, together with the orbits and the space immediately between them and the upper mandible, is described as bluish; that of *Javanicus* as yellowish-white. The two species here described are undoubtedly the two allied Tenasserim races mentioned by Mr. Barb (*J. A. S.*, X, 922), as differing only in the colour of the naked skin of the throat and around the eyes, which in one is of a beautiful blue, and in the other an equally rich yellow: it is impossible to form any decided opinion from the dry specimens; but it would seem from them that the larger or *puoran* (apud nos) is the yellow-throated species, and the smaller or *plicatus* the blue-throated.

In Griffith's work (VII, 418), *B. Javanicus* is placed among the species without a casque; and I have no confidence in the synonyms attached, particularly as the *Calao de Waygiou*, or *B. ruficollis*, Vieillot, is included among them. There are evidently several allied species which require further investigation, unless they have been subsequently elucidated, which is most probable.

In a series of nine specimens before me of *B. plicatus*, the curious fact of the successive advance forward of the ridges of the casque, in consequence of the growth from behind, is particularly manifest. In none of these specimens does the number of transverse ridges exceed seven, and it is obviously apparent, upon inspection of the series of

specimens, that these ridges are thus pushed forward till they finally scale off anteriorly, while others are continually in process of formation behind; also that in young birds they are individually much larger and thinner in substance, becoming narrower and closer by degrees. I remember making an analogous observation in the instance of the very remarkable long-legged Abyssinian Hornbill (or *Abba Gumba* of Bruce, sub-genus *Bucorvus* of Lesson), the casque of which forms a hollow tube, open in front in the adult, and which continually advances forward, the extremity shredding off, from time to time, in form of a ring. We have seen that the transversely grooved plating on the sides of the base of the upper mandible of *B. Nipalensis*, and necessarily of *cassidix* and what other species possess an analogous structure, is constantly renewed behind and worn away in front in like manner.

I now return to the ordinary Hornbills without a gular bag, and of which the sexes are similar in plumage, as exemplified by *B. cavatus*, *rhinoceros*, *Malabaricus*, &c. It is among these that the casque attains its maximum dimensions, being generally not large in the preceding group. I have already remarked that Levaillant's figure of *B. rhinoceros*, which is copied by Shaw, represents the tail to be black with a white tip, and the rest of the plumage to be wholly black; whereas the considerable number of specimens which have passed under my observation have invariably had the thighs, vent, and lower tail-coverts, white, and the tail white with a black cross-band as in *B. cavatus*: a circumstance which tends exceedingly to diminish our faith in the alleged colouring of *B. cavatus*, as distinct from the Indian Homrai. Sir Stamford Raffles rightly remarks that the female of *B. rhinoceros* is smaller, with the horn more recurved; and that the iris is white, while that of the male is red: this corresponds with Mr. Hodgson's observation of the diversity of colour of the irides in the sexes of *B. cavatus*, and which probably obtains likewise in *Malabaricus* and some others.

The two next have been much confounded, for which reason I shall describe them fully.

3. *B. Malabaricus* (verus), Latham; *B. monoceros*, Shaw, and probably also *B. violaceus*, Shaw: *Bægma Dunnase* of Lieut. White, *As. Res.* IV, 119. Black with white under-parts from the breast, also the tips of the primaries and secondaries, and the entire three outer

tail-feathers on each side, with more or less of the next pair: bill and part of the casque yellowish-white, having a flesh-coloured spot at the base of the lower mandible, spreading on the throat, which is bare of feathers except along its middle; contiguous to this, the base of both mandibles is black, extending obliquely downward and forward from before the eye, also the hind-margin of the casque (in the male only), and a large patch of the same occupies the anterior three-fourths of the casque in old specimens, but never reaches downward to the upper mandible (as in the next species): casque very large, and exceedingly compressed laterally, protruding far backward over the crown, and its ridge terminating in an acute angle anteriorly, being prolonged considerably beyond the junction of the casque with the upper mandible. Female similar but rather smaller, the bill and casque proportionally not so large, there is no black on the hind-edge of the latter, and the irides are also probably not crimson as in the male. The young have at first no black on the incipient casque, which appears and increases in quantity with the growth of the latter. Entire length of an adult male nearly three feet, of which the tail measures nearly fourteen inches, and the bill from gape seven inches, being with the casque four inches high; closed wing thirteen inches, and alar expanse three feet and a quarter. Inhabits the peninsula of India, being replaced to the eastward by the next species. Raffles, indeed, includes it in his catalogue of Sumatran birds; but *B. albirostris* has been so frequently confounded with it, that the latter is perhaps here meant, the more especially as Dr. Horsfield includes *B. albirostris* in his catalogue of the birds of Java: possibly, however, both of these notices refer to the *B. bicolor* of Eyton, which I will describe presently.

B. violaceus of Shaw is stated to resemble *Malabaricus* in size and plumage, except that its glosses are brighter and more iridescent, and that "the base of both mandibles, as well as that of the casque, is ornamented with a band of crimson, which at the base of the lower mandible extends to some distance beneath the eyes, and is crossed by two narrow black bars." Described and figured by Levaillant from a living specimen, said to have been brought from Ceylon; and a figure of the bill and casque is given in Griffith's work (VII, plate to p. 435, being doubtless copied from Levaillant), wherein the

casque is represented as essentially similar to that of *Malabaricus* of corresponding age, but the black is not continued forward to its tip, and there is a white or pale line throughout the length of the casque near its ridge, which is not mentioned to occur by Shaw; Capt Tickell, however, in his description of *Malabaricus* (*J. A. S.* II, 579,) mentions "a broad lateral irregular line of yellow, occupying nearly the whole length of the casque;" but this does not occur in the specimens which he has presented to the Society, unless the lower border of the casque be intended, which is not probable; and he does not mention any crimson at the base of the bill, but only the flesh-coloured base of the lower mandible and adjoining black, as usual. At most, I conceive that *B. violaceus* is but an occasional variety of *B. Malabaricus*, and which needs verification.

4. *B. albirostris*, Shaw; *B. leucogaster*, Nobis, *J. A. S.* X, 922, — the young: generally placed as a synonym of *Malabaricus*, which species it represents in Bengal, Nepal, Assam, and the Tenasserim provinces, and according to Dr. Horsfield it likewise occurs in Java. Its size, however, is much inferior, and the four pairs of lateral tail-feathers are only tipped with white: the casque, also, is much less compressed, in fact considerably bulged or inflated, and the black patch upon it is much smaller, appearing only on the extreme tip of the ridge, but spreading downward and backward over part of the middle of the upper mandible, which latter it never reaches in *Malabaricus*; the cutting edges of both mandibles are also more or less black in *albirostris*. Length of wings and of tail ten or eleven inches only. The finest head before me measures six inches and a half from point of upper mandible to gape, the bill and casque being above three inches and three-quarters high, of which the latter is half; length of casque seven inches, the hind portion protruded far backward over the crown, and the anterior part gradually narrowed, and terminating in a less acute angle (as viewed laterally) than in adult *Malabaricus*. Throat but partially feathered as in that species, and the same fleshy spot at the extreme base of the lower mandible.

Allied to these are some species in the Malay countries, as apparently the *B. Malayanus* of Raffles, and the following:—

B. bicolor, Eyton, *P. Z. S.* 1839, p. 104. Wholly black, except the terminal three inches and a half of all but the middle pair of tail-

feathers, which are white: the beak and its casque are spotless yellowish-white, excepting the base of the former and hindmost part of the latter, which are black: head crested, as usual. The casque is allied in form to those of the two preceding species, but especially to that of *B. albirostris*, being less inflated than in the latter, and much less compressed than that of *B. Malabaricus*; moreover, its front does not project forward as in the last mentioned species. Length about two feet and three-quarters, of which the middle pair of tail-feathers rather exceed fourteen inches, these being two inches longer than the next pair, and the rest graduating but slightly; wing twelve inches and a half; bill to gape five inches and a half, and casque rather exceeding five inches. The young, according to Mr. Eyton, have the incipient casque black. Originally described from the Malay peninsula, but the Society's specimen is probably from the Moluccas.

5. *B. Ginginianus*, Shaw: *Putteal Dunnase* of Lieut. White, *As. Res.* IV, 121: common Grey Hornbill of India generally. A small species, with a low and compressed casque, the ridge prolonged anteriorly to a very acute angle, and the hind part concealed by the feathers of the forehead, and not extended backward over the crown. General colour grey, paler below, and from the breast gradually albescent; ear-coverts darker, and a light streak over the eye; primaries and secondaries dusky, the latter margined with grey, and all tipped with white; tail also black near the end, and tipped with white. Bill and casque dusky, the tips and ridges of both mandibles whitish.

In the colouring of the tail of this little species may be discerned a slight approach to the extraordinary Helmeted Hornbill (*B. galeatus*) of the Moluccas, wherein the middle pair of tail-feathers, which in the present species and some others exhibit a marked tendency to be prolonged considerably beyond the rest (as in *Prionites*, *Crypsirina*, &c.), attain an extraordinary developement; and it is remarkable that in *B. galeatus* the portion of them chiefly from the tips of the next pair to the subterminal dark band are generally much nibbled away by the bird, except when quite newly put forth, and to such an extent in the Society's adult specimen, which has one of its long middle tail-feathers new and the other old, that, in the latter, the barb is pretty well bitten away, as so usual in *Prionites*. This latter singular genus, which presents the nearest approach to the Hornbills in the

New World, (very much more than the Toucans, which are far more closely related to the Barbets,) is provided with an efficient serrature to both mandibles, by means of which the species nibble away the web of their middle tail-feathers at that part so closely, that it sometimes requires a magnifier to perceive that the truncation is artificial; still it does not appear that this can be cited among the tokens of affinity which connect *Buceros* and *Prionites*, for in other birds having the same form of tail, which exhibit no particular affinity for these *Syndactyli*, as *Crypsirina* for instance, the same nibbling of that part is frequently apparent.

Having mentioned *B. galeatus*, I am induced to add, that observation of the habits of this species, more than of any other, is likely to acquaint us with the intent of that rostral appendage for which most of the members of this genus are so remarkable. *B. galeatus* has a short and nearly straight, and thus powerful, beak, and its casque has a mass of solid bone anteriorly, to which no other species appears to offer the slightest approach: now this must be for work of some kind, requiring extraordinary protection for the forehead; and other species constantly wear the casque away in front, by some means: moreover, in seeming reference to the liability of the excrescence to detach particles from above, the eyes of these birds are protected by very stout lashes, as is also the case with the *Crotophagæ* of tropical America, which have likewise a rostral protuberance very similar to that of several of the smaller Hornbills; but the lashes are equally found in those Hornbills which have the appendage small or altogether wanting, as well as in the Coucals (*Centropus*) and various other *Cuculidæ* additional to *Crotophaga*: the presence of eye-lashes is, however, very rare in the class of Birds, the only other groups which I remember as possessing them being the *Raptores* generally (which have slight lashes), the *Cursores* or Ostrich group, and that extremely remarkable and isolated American bird the Hoazin (*Opisthocomus*), which can be approximated to nothing else.

Another peculiarity of the Helmeted Hornbill is its naked neck and interscapulary region, which, added to its short beak, and solid-fronted casque, and the extraordinary length of its middle tail-feathers, seems to indicate this bird as a subgeneric form of *Buceros*, quite as distinct in the *Bucorvus* of Lesson founded on the long-legged Abyssinian species.

The only remaining Indian Hornbill is

6. *B. Gingalensis*, Shaw ; *B. Bengalensis*, Gray, in Griffith's work, though extremely doubtful as even occurring in Bengal. Size of *B. Ginglyaninus*, the beak large but without a casque (vide figure in Griffith's work, VII, pl. to p. 435): "the colour of the upper part of the head and the back is blackish brown, with a cast of bluish-grey, the smaller coverts edged with black, marking out that part of the plumage into so many scale-like divisions: the face and under-parts are greyish-white, deeper on the belly and thighs: the two middle tail-feathers are bluish-grey, and the rest somewhat deeply tipped with white." Originally described from Ceylon, and also frequents lofty jungle on the Malabar coast. The Society possess no specimens.

Halcyon Smyrnensis, var. ? *albogularis*, Nobis. Differs from *H. Smyrnensis* in having the white of the under-parts confined to the throat, and the black wing-patch extends over the entire coverts, excepting those of the primaries and the winglet, and also replaces the rufous on the shoulder of the wing. Habitat uncertain. Among a great number of Indian specimens of *H. Smyrnensis*, I have found no variation whatever, the plumage being exactly as described by Mr. Strickland in *An. and Mag. Nat. Hist.*, August, 1842, p. 443, this description having been drawn up from a Syrian specimen: and I may remark that the young bird, in its first plumage, is marked and coloured precisely as in the adult, only its hues are not so bright, and the bill is dusky above with a yellow tip.

Picus, subgenus *Gecinus*, Boié; the Green Woodpecker group, exemplified by *P. viridis* and *P. canus* of Europe, specimens of both of which are in the Society's museum, the latter species received from Norway. This subgeneric form, peculiar to the old continent, has numerous representatives in India and the neighbouring countries. Two species are figured in Gould's *Century of Himalayan birds*, but in disadvantageous contrast to the later figures by that naturalist; and there are others nearly allied and hitherto confounded with them.

1. *P. squamatus*, Vigors, *P. Z. S.* 1831, p. 8; Gould's *Century*, pl. XLVIII: *P. dimidiatus* (?), apud Hardwicke and Gray, not of Temminck and Wagler. Length thirteen inches and upwards, of

wing six inches and a quarter, and middle tail-feathers five and a quarter; bill to forehead an inch and three-quarters. Upper-parts rather dull green, the rump and upper tail-coverts much brighter yellowish-green: throat, fore-neck, and breast, greyish, without any markings; the breast slightly tinged with grey in some, and always the sides of the neck, passing into the hue of the nape: under-parts from the breast white, each feather subterminally margined with dusky-black, and a few having also a slight line of the same on part of the shaft; the under tail-coverts doubly marked with arrow-head bars: primaries dusky, with a series of white spots barring their outer webs, and the margin of their inner webs towards the base; the rest of the large wing-feathers barred throughout the margin of their inner webs, as seen conspicuously on the under surface of the wing: each feather of the tail is also conspicuously barred throughout on both webs: the outer margins of the secondaries and tertiaries, together with their larger coverts, are obscurely barred with a lighter colour; and the primary coverts and the winglet are marked like the primaries. The male has the forehead and crown crimson, and the occiput inclining to scarlet; which parts are in the female black, the feathers laterally margined with light grey, as is also a streak from the corners of the mouth in both sexes, which is bordered above by a white one continued from the nostrils, and this again surmounted by a black one between the bill and eye; there is also a white streak over the eye: bill yellowish, the base of the upper mandible dusky. The young have a mottled appearance, the margins only of the feathers of the upper-parts being green, bordering a dusky tint; the barring of the tertiaries is more developed; and the breast and lower-part of the fore-neck are marked nearly like the belly, whereon the black portion of each feather is much broadened internally, contracting the pale medial space within: the crimson tips of the coronal feathers of the young male are much less developed than in the adult, and there is scarcely a trace of red upon those of the occiput: bill chiefly blackish. Gould's figure of this species is much over-coloured, representing a green breast, instead of greyish with at most a very faint tinge of green; and the wings should be much more sombre olivaceous-green; the abdominal markings are likewise badly represented. Hardwicke's figure assigned to *P. dimidiatus* by Gray, would appear also to be a bad representation of the present species,

with the barred appearance on the secondaries and tertiaries much exaggerated. The *P. squamatus* appears to be peculiar to the Himalaya.

The following two species appear to be confounded under *P. squamatus* in Mr. Jerdon's list:—

2. *P. striolatus*, Nobis. Smaller and brighter-coloured than the preceding, with the throat, neck, and breast, marked nearly like the belly, and the caudal bars almost obsolete, except on the middle pair and exterior web of the outermost pair of feathers in some specimens. Length about eleven inches, the wing five inches, and middle tail-feathers four inches; bill to forehead an inch and a quarter. Head and upper-parts like those of *P. squamatus*, but the colours brighter; the dark streak from the corners of the mouth inconspicuous, from the black being reduced to a narrow medial line on each feather; and there is no black mark occupying the upper half of the loreal feathers: the entire under-parts are whitish, not suffused with green as in the next species, but streaked with dusky green, more or less dark on the breast, and always greenish-black on the belly; upon the throat and fore-neck the feathers have each a mesial dark line, more or less defined, which on those of the breast and sometimes above it widens, and is divided to near the tip of the feather by a central whitish streak, which latter also widens on the belly till the feathers of that part present much the same appearance as those of *P. squamatus*, only that a mesial dark line within the white is a great deal more prevalent, and the general aspect of the markings is somewhat less clearly defined than in that species: the sides of the neck are greenish and more obscurely streaked, and the nape and interscapularies are in some specimens indistinctly marked like the feathers of the breast: bill yellowish, the ridge of the upper and tips of both mandibles dusky. Female analogous to that of the preceding species. The Society possess specimens from the Himalaya and Central India, and have received this together with the last species from Mr. Hodgson, who failed to discriminate them.*

3. *P. viridanus*, Nobis. Size about that of the last species, and much resembling it, but the neck, breast, and under-parts very deeply tinged with green, having a strong fulvous cast, and the tail longer,

* More recently, however, Mr. Hodgson has distinguished these two species.

and spotted instead of barred with fulvous white, which in some specimens is obsolete on all but its middle pair of feathers. Length about twelve inches, of wing five inches and a half, and tail four and a half; bill to forehead an inch and three-eighths. Head as in *P. squamatus*, the ear-coverts grey, and streak from the corners of the lower mandible as in *P. striolatus*, or broad and consisting of white feathers having a black central line, which in *P. striolatus* is less strongly defined, and the streak is in that species so nearly similar to the striated adjoining plumage as to be little conspicuous: throat greenish, contrasting with the streak from the corners of the mouth; and the neck green deeply tinged with buff all round, having only indistinct striæ in front; breast the same, the markings becoming more defined, and on the belly they are strongly defined; the ground-hue of the breast is deeply suffused with fulvous-green, having a dark green double streak on each feather uniting at the tip, and a narrow medial line upon the shaft, the lateral edges of the feathers inclining to be albescent; on the belly the ground-hue is whiter, and the marking of the feathers is nearly as in the foregoing species, but with sap-green, instead of black as in *P. squamatus*, and greenish-dusky as in *P. striolatus*: on the sides of the breast, or rather of the fore-part of the abdomen, the feathers have a broad dark green streak on their outer web, away from the shaft, and a narrow one on their inner web adjoining the shaft, besides which the lateral edge of the inner web is also dark green; the corresponding feathers of *P. striolatus* have the whitish part much broader, and containing a broad mesial streak of greenish-black, which again has a central white mark in some: the upper-parts resemble those of *P. striolatus* in brightness of colouring; and the middle tail-feathers are marked with dingy pale spots along the exterior of both webs, more or less trace of which exists also on the outer webs of the other tail-feathers: bill black, the lower mandible bright yellow except at tip. The female I have not seen. A male in its first plumage has all the colours duller, and the markings of the breast and under-parts very indistinct. The Society's specimens are from Arracan, except the young one which was obtained further South, being the so-termed *P. squamatus* of Vol. X, p. 923. Mr. Jerdon, however, clearly enough indicates this species in the description of his *P. squamatus* of Southern India.

4. *P. occipitalis*, Vigors, *P. Z. S.* 1831, p. 8; Gould's *Century*, pt. XLVII: *P. barbatus*, Hardwicke and Gray, apparently a bad representation of the female: *P. affinis* (?), Raffles, *Lin. Trans.* XIII, pt. II, 288, which name would hold precedence. Length about twelve inches and a half, or perhaps thirteen inches in the recent specimen, of wing six inches, and middle tail-feathers four and a half; bill to forehead an inch and five-eighths. General colour green, but much less vivid than represented in Gould's figure, the rump brighter and more yellowish green as usual, though in one of eight specimens before me the hue of the rump is all but uniform with that of the rest of the upper plumage, and the same specimen has also the tail quite plain, whereas in all the rest the middle tail-feathers are barred (in general conspicuously) with dingy greenish, and occasionally the other tail-feathers obscurely so, especially the outermost: the under-parts likewise vary, being in some nearly as bright green as the upper, and in others pale dusky-ash, with sometimes a few green and partially green feathers intermixed: throat pale; the sides of the head grey; a black streak from the corners of the mouth, the feathers of which are laterally edged with grey in the female; and crown of the male crimson, the occipital region black continued to the nape,—the crown of the female being black with grey lateral edges to the feathers, and the occiput pure black as in the male: primaries and their coverts barred with a series of white spots on their outer webs, and wings underneath marked as usual in the group: bill wholly dusky black. Inhabits the Himalaya, and also the Tenasserim provinces; likewise Sumatra, if this be the *P. affinis* of Raffles, described as follows:—

“This species is *about ten or eleven inches in length*, dusky-green above, with a shade of yellow on the lower part of the back; cinereous or *slightly ferruginous* below, *mixed with brown on the abdomen*. Quill-feathers brown spotted with white. Tail-feathers brown, pointed as usual in this genus; the two uppermost with a few light-coloured spots along their inner margin. A gray patch encircles the eyes, bounded below by a black stripe mixed with white spots, which runs from behind the lower mandible. In the male the crown of the head is red, often variegated with black, each feather being black at the base and red at the tip; in the female it is *entirely black*.

The bill and feet are blackish-blue." I have italicized the few particulars wherein it would appear to differ from the species above described, and considering its alleged inferiority of size, I think that it will not improbably prove distinct.

The two next species resemble in having a nuchal crest of brilliant yellow silky feathers, much as in *P. (Brachylophus) mentalis*, which is also a green-bodied species, though pertaining to a different subgroup of Woodpeckers; and the first of them has also the primaries barred with ferruginous and black, nearly as in *P. mentalis*, and also much resembling the general colouring of *P. pyrrhotis*, Hodgson, *J. A. S. VI*, 108, which latter species, so far as I can judge from a young specimen, would seem to be best ranged in *Gecinus* (the subgenus under consideration): in other respects, the two following Woodpeckers do not appear to be particularly allied, further than that in both the rump is nearly or quite of a uniform green with the back.

5. *P. flavinucha*, Gould, *P. Z. S.* 1833, p. 120; *P. flavigula*, Hodgson, *J. A. S. VI*, 106, which see for description. It appears to be not uncommon in Nepál, and also in Arracan.

6. *P. Nipalensis*, Hardwicke and Gray, *Ill. Ind. Zool.*, badly figured; *P. mentalis* apud Jerdon, *Madr. Jl.* Vol. XI, 214, but not *P. (Brachylophus) mentalis* of Temminck. Much smaller and less robustly formed than the preceding species. Length about nine inches and a half, the wing five and a quarter, and middle tail-feathers four and a half; bill to forehead about an inch. Colour of the upper-parts bright green, the throat whitish, with dusky tips to the feathers, which latter become so much developed on those of the foreneck and breast, that these parts appear wholly dusky, having sometimes a slight ashy, and sometimes a greenish, cast; belly and flanks dingy whitish, with dusky cross-bars: lores whitish, surmounted by black, over which (in the male) commences a crimson streak meeting its opposite on the forehead, and continued backward to the occiput, this crimson being confined to the occiput in the female; the white of the lores is continued as a streak to the lowermost ear-coverts, and the male has an admixture of crimson on the moustachial plumes: the large wing-feathers are bright ruddy on their outer webs (anterior to the emargination of the primaries), which are margined with green, slightly on the primaries and deeply on the secondaries and ter-

tiaries; underneath, the wings are dusky, barred with greenish-white: tail blackish, its middle pair of feathers margined with ruddy-green: bill dusky, laterally marked with yellowish except at tip; "legs sap-green; irides reddish-brown" (Jerdon). Common on the Himalaya, and occurs rarely in other parts of India, including the vicinity of Calcutta.

Mr. Jerdon suggests that the *P. chlorolophus* of Vieillot may be the young bird. In the *Dict. Class.*, I find a *P. chloropus*, Vieillot, from Bengal, described, which is most probably a variety only of the present species, in which case the name would take precedence. It sufficiently agrees in general respects, except that the supercilium and a subocular line are stated to be pointed with yellow, instead of crimson, the primaries are said to be externally spotted with yellowish-white, and the throat and fore-part of the neck to be greenish, which last is fully applicable to many specimens.

In *Proc. Zool. Soc.*, for 1841, p. 31, Mr. Strickland indicates three groups of Woodpeckers included under *Brachylophus* of Swainson; viz. the green Woodpeckers (*Gecinus*, Boié),—the crimson-winged species (*miniatus*, *puniceus*, and *mentalis*), to which he proposes to restrict Mr. Swainson's term *Brachylophus*,—and the short-thumbed species, exemplified by the commonest of Indian Woodpeckers (*P. aurantius*, Lin., v. *Bengalensis*, Gm., v. *nuchalis*, Wagler, v. *hemipodius*, Swainson), which group he characterizes by the appellation *Brachypternus*. This last division, however, still does not appear to me to be rightly constituted, but comprises two very distinct forms, namely, that of the rudimental-thumbed *P. aurantius*, which I think should be placed with those Indian species (*Chrysomotus*, Swainson, comprising *P. tigea*, *Shorei*, and *Grantia*,) wherein the thumb entirely disappears, and in this case the name *Brachypternus* would be no longer applicable; the other group having a well developed fourth toe, and being altogether much more powerfully formed, and highly typical or characteristic of the Woodpecker structure. To this last, which may be designated *Chrysocolaptes*, appertain *P. strictus*, Horsfield, (v. *sultaneus*, Hodgson),* *P. hæmatribon*,

* This is generally, I believe, now considered to be *P. Goensis*, though the description of the latter by Daubenton and others certainly does not apply.—Referring to Dr. Horsfield's catalogue of Javanese birds prefixed to his Volume of Researches, I observe that he there refers his *P. strictus* to *P. Goensis*.

Wagler, and also I believe certain other species, together with the following :—

P. (Chrysocolaptes) melanotus, Nobis. Length above a foot, of which the tail exceeds three inches and a half; wing six inches; beak to forehead an inch and seven-eighths; long hind-toe and claw an inch and a half; short hind-toe and claw three-quarters of an inch. Crown and occiput of male splendid carmine, less crimson than in *P. strictus*, but otherwise nearly similar, only not converging to a peak behind; forehead mingled black and white; a white streak commences behind the eye, and is continued to the nape, the entire hind-part of the neck being wholly white, much more broadly so than in *P. strictus*, and extending down upon the interscapularies; the rest of the back, rump, tail, and scapularies, are brownish-black, having a slight aureous cast on the last; wings bright golden-yellow, less vivid on the volar feathers and their larger coverts; the bend of the wing, with the winglet, and the coverts of the primaries, dull blackish; primaries dusky, having distantly placed large round whitish spots on their inner webs, and dull similar spots on the outer webs of those contiguous to the secondaries; there is a broad black streak down the sides of the neck from the eye; and the under-parts are handsomely streaked, commencing with three black stripes on the throat upon a white ground; on the breast the feathers are white with black lateral edges, which last gradually almost disappear on the belly: bill blackish; feet apparently have been lead-coloured; and the irides are marked to have been "brilliant pink-red." This beautiful bird was obtained near Midnapore.

I have other Woodpeckers to describe, but they require some further elucidation at present; and of allied forms, Mr. Hodgson has recently sent the *Picumnus innominatus*, Burton, *P. Z. S.* 1835, p. 154, vel *Piculus* (olim *Vivia*) *Nipalensis*, Hodgson, *J. A. S.* VI, 107, which is perfectly true to the generic type of *Picumnus minutus*, Tem., of the West Indies and Guiana; and the *Comeris* (olim *Sasia*) *ochracea*, Hodgson, *J. A. S.* V, 778, which I suspect will come under the *Microcolaptes* of Temminck, founded on his *Picumnus abnormis*. The *Sasia ochracea*, Hodgson, was obtained by Dr. McClelland in Assam.

[The following I have just received from Darjeeling.

Picus (*Dendrocopus*, Sw.) *cathpharius*,* Hodgson. Length about seven inches and a half, of wing four inches, and middle tail-feathers two and a half; bill to forehead seven-eighths of an inch. Colouring as in *P. Himalayanus* (XI, 165), except that the under tail-coverts are not red, and the crimson of the occiput extends behind the ear-coverts to the black streak below them, tending to be continued into a gorget on the breast, where the feathers have a crimson tinge: the bill also is proportionally much smaller than in that species, and of a white colour; and the tail is less rigid and pointed: — the general form being that of the European *P. minor*. Upper-parts black, with a white wing-patch, and series of white spots on both webs of the large alars: lower-parts fulvescent-brown, the feathers below the fore-neck having mesial black streaks; there is a black stripe from the lower mandible along the sides of the neck, and above it a whitish stripe through the eyes to the ear-coverts inclusive, commencing on the sides of the forehead; the two outer tail-feathers are barred with whitish, and the next one spotted with the same on its outer web only; and the occiput of the male is crimson as described, extending laterally behind the ear-coverts. A Nepalese female in nestling dress (sent by Mr. Hodgson) is rather smaller, with no red on the occiput, but traces of it on the breast as in the adult male; and the outer tail-feathers have the pale bars broader than the black ones, being the reverse of what is seen in the adult: bill chiefly dusky.]

(*To be continued.*)

Addenda.—As the remainder of the foregoing Appendix will appear in a subsequent number, I shall introduce here a few notices referred to in a note to p. 941, ante.

Rhizomys from Arracan, p. 925. I have just seen two specimens of the true *Rh. badius*, Hodgson, from Darjeeling; and the species is distinct from the Arracan one, although Mr. Hodgson's description of *Rh. badius* will apply to either of them. The Nepalese species is in colour wholly slaty-grey, having the fur of the upper-parts tipped with dark rufous-brown, but shewing only a slight trace of this hue on the under-parts, which are glistening dark cinerascens; the brown

* A latinization of different native names, or rather modifications of the same name, for Woodpeckers in general.

tips of the dorsal fur are also somewhat glistening; and the feet are dark. The other I now designate

Rh. castaneus, Nobis. Size and structure of the preceding, but the entire colour very much lighter, and the fur considerably less dense: base of the piles pale dusky-ash tipped with vivid light chesnut-bay, which is denser and consequently appears brighter on the cheeks and sides of the head: under-parts merely paler than the upper, the faint ashy hue of the bases of the piles inconspicuous: feet semi-nude and flesh-coloured; the claws pale: and towards the cleft of the upper lip albescent. Inhabits Arracan.

Note to p. 928. Among some Darjeeling mammalia lately collected by Capt. Charleton, is a beautiful specimen of the *Felis marmorata*, Martin, *P. Z. S.* 1836, p. 107; which, like the *F. macrocelis* (to which it is allied), was originally described from a Sumatran example. It is the species referred to *F. Diardi* in the volume on *Felinæ* in the 'Naturalist's Library.'

Note to p. 933. Mr. Hodgson now suggests the name *Hemirhynchus* in lieu of *Temnoris*.

P. 938. Capt. Charleton also possesses a specimen of *Sitta formosa*, Nobis, the wing-primaries of which agree in relative proportion with those of other Nuthatches: and he has several examples of the green *Kitta* according precisely with that described, which, as Mr. Hodgson informs me, are merely in the ordinary plumage newly put forth, the colour changing to blue after a certain amount of exposure.

The same collection has also yielded a fourth species of my genus *Cyornis*, as alluded to in a note to p. 941; viz.

C. unicolor, Nobis. Differs from the three others, in having no ferruginous on the under-parts; whilst the upper are of a lighter blue than in *C. rubeculoides* and *C. banyumas*, and of a much brighter and less greyish blue than those of *C. Tickellia*: lower-parts paler and tinged with verdigris, being still lighter on the belly. The only specimen examined was killed while moulting, and retains many of its mottled nestling feathers, especially upon the head and throat, also the wing-coverts, and an intermixture of them on the bright blue dorsal plumage: these nestling feathers are pale fulvous-brown with narrow black margins on the clothing plumage, the wing-coverts are dusky with pale fulvescent tips, and the large alars are tinged with

cyaneous, the tertiaries having small fulvescent tips like the wing-coverts. Length about six inches and three-quarters, of wing three and one-eighth, and tail two and three-quarters; bill to gape thirteen-sixteenths of an inch, and tarse five-eighths of an inch. Occurs at Darjeeling.

P. 942, *note to preceding page.* No. 51 of the birds of Capt. Tickell's list.—Since this was printed, Mr. Jerdon has written me word, among other matters, — “I have also another Barbet sent from the west coast, very like *viridis*, but distinct, and evidently the *Bucco lineatus* of Tickell's list.”

Note to p. 952. Mr. Hodgson informs me that the word *leucopophlus* alluded to, was, as I suggested, a copyist's mistake for *leucolophos*; and I perceive that there is an “*Ianthocincla leucocephala*, Gould,” mentioned in a list of Bengal birds published in the ‘Annals and Magazine of Natural History’ for June, 1842, p. 477, which I also suspect is intended for *leucolophos*.

P. 961. *Pitta gigas*, apud nos. In a very interesting collection just received from Arracan, there are two fine specimens of this *Pitta*, which I now think must be distinct from *P. gigas*, in which case the species might be termed *P. cyanea*. These birds have the crown brown, with a black medial stripe, the occiput bright red, and throat whitish, having a black stripe on each side; the rest of the upper-parts are entirely of a fine blue, and the lower pale blue, sullied with green on the breast, and mottled with black as described. Length about nine inches.

P. 966 *Phylloscopus magnirostris*, Nobis. The same collection has yielded a second specimen of this new species.

P. 969 et seq. *Nectarinia, Dicæum*, &c. Three species of this group are also sent, of which two appear to be new; viz.

Nectarinia Phayrei, Nobis. This beautiful species pertains to the group exemplified by the Indian *N. Zeylonica* and *N. minima*, and nearly agrees with Sir W. Jardine's description of *N. Hasseltii*, Tem., in the *Nat. Libr.*, but has the “mantle,” or at least the interscapulary region, deep black. Length about three inches and three-quarters, of wing an inch and seven-eighths, and tail an inch and a quarter; bill to forehead half an inch. Crown brilliant golden-green, the feathers of soft and disunited texture; cheeks, sides and back of the neck, inter-

scapularies, and wings, deep black; tail also black, richly glossed with purple; scapularies, rump, and upper tail-coverts, brilliant steel-blue; throat and fore-neck splendid amethystine-purple; breast, and flanks anteriorly, rich dark red; posteriorly, with the vent and under tail-coverts, dull greyish-black: bill and feet black. Inhabits Arracan, and is dedicated to its discoverer Capt. Phayre, the present Senior Assistant to the Commissioner of that province, to whom the Society is indebted for numerous zoological contributions of much interest.

Dicaeum chrysochlore, Nobis. A thick-billed species, devoid of shewy colouring. Length about four inches, of wing two inches and one-eighth, and tail an inch and a quarter; bill to forehead three-eighths of an inch. Upper-parts uniform vivid, but glossless, golden-green, including the tertiaries, the margins of the secondaries, and their coverts; the rest of the wing, and the tail, dusky black, the latter margined towards its base with the colour of the upper-parts, and the primaries slightly with yellowish-white: entire under-parts slightly yellowish-white, except the lower tail-coverts which are bright yellow; the breast and flanks being streaked with dusky, and a line of the same proceeds from each corner of the lower mandible: inside of the wings chiefly white: bill and feet blackish. Inhabits Arracan. The third species sent is *D. erythronotum*.

The discovery of *D. chrysochlore* enables me, I think, to classify a very curious little bird, (the affinities of which have long puzzled me,) from Nepál, but which I have not now by me for comparison, as Mr. Hodgson took the specimen away with him. The following is, however, the description which I took of it:—

Pachyglossa, Hodgson, *n. g.* Bill rather short, and very Swallow-like as viewed from above, but less depressed, with the ridge of the upper mandible obtusely angulated, and the terminal half much compressed from the inflection of its tomia; nearly conical as viewed laterally, the outline of the upper mandible curved, and its tip overhanging that of the lower mandible; the outline of the lower mandible is almost straight. Nostrils nearly closed by impending membrane, the aperture forming a narrow slit (in the dry specimen). Gape unarmed. The wings are large, having no rudimental first quill, but the three first primaries are subequal, the third rather the longest, and the fourth is a little shorter than the first; they extend to three-fourths

of the length of the tail, which latter is rather short. Tarse short, but nearly equal to the middle toe with its claw: the toes formed for perching, the inner shorter than the outer toe; and claws rather short, moderately curved, and much compressed.

P. melanozantha, Hodgson. Length about four inches and a half, of wing two and seven-eighths, and tail an inch and a half; bill to frontal plumes five-sixteenths of an inch, and tarse half an inch. Upper-parts dusky-cinereous, tinged with dull olive-green on the head, and partially elsewhere; upper tail-coverts of the latter hue: lower parts paler, the throat white, passing down the centre of the fore-neck and breast; belly and lower tail coverts bright yellow; axillaries, and much of the inside of the wings, white; the outermost tail-feather has a large subterminal white spot on its inner web, and the next a similar but smaller spot: bill blackish, except the base of the lower mandible, which is yellow; and feet apparently have been greenish. Inhabits Nepâl.

One or more of the following species will most probably be found to range in, or near, the present genus. 1, *Pipra squalida*, Burton, *P. Z. S.* 1836, p. 113; — 2, *Parisoma vireoides*, Jerdon, vel *Fringilla agilis* of Tickell's list, which I expect to receive in a few days; and 3, *Pardalotus pipra* of Lesson's *Manuel*, from the Himalaya, the description of which I have not seen, and which may prove identical either with *Pipra squalida*, which also is from the Himalaya, or with Mr. Hodgson's bird here described.*

Among other interesting species forwarded in the present collection from Arracau, I may just notice *Semnopithecus obscurus* of Reid, which is known to be common in the vicinity of Singapore, and should therefore be the Tenasserim *S. maurus* of Helfer; — *Tupaia Javanica*,† fine specimens (the genus *Gymnura* having been previously met with in the same province); — the *Picus canente*, Lesson, which

* Upon consideration, the hard-billed *Dicaeum* group, comprising *Myzanthæ* and *Pachyglossa* (?), appears very distinct from the soft-billed *Nectarinia* group, comprehending *Arachnothera* and *Anthreptes*, which latter subgenus might, I think, be very properly abandoned, as founded on insufficient characters.

† Mr. Hodgson, to whom I exhibited a specimen of this animal, had never met with the genus in Nepâl, nor was it known to his experienced shikaree, to whom I also shewed it; but Capt. Tickell assures me, that he distinctly recognises the genus as inhabiting Central India!



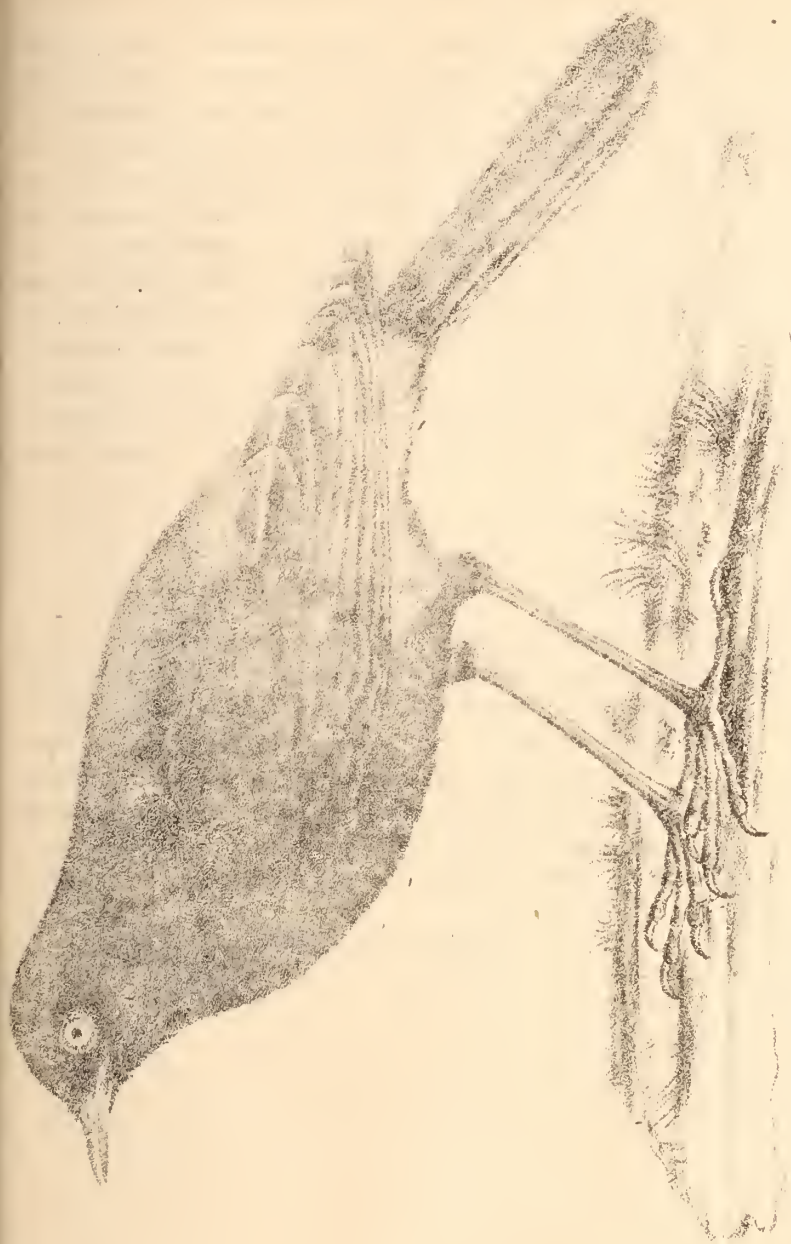
Indiutor xanthomotus, Blyth;
natural size.



Myiophobus superciliosus.
Beyth, natural size.



Paradoxornis ruficeps, Blyth.
natural size.



Cinclidium frontale, Blyth,
Natural size.

ranges, with *P. cordatus*, Jerdon, (a species which the Society has received from Tenasserim as well as from Southern India), and with the Malayan *P. concretus*, Tem., in the subgenus *Hemicircus*, Swainson; — a new Partridge (*P. Phayrei*, Nobis), closely resembling in plumage the Pintado Partridge of the Mauritius (*Francolinus perlatus*), but of a less robust form, and the male armed with well developed spurs, — two fine new Herons, one of them, however, perhaps the *Ardea ardesiaca* of Wagler, &c. In previous collections, Capt. Phayre has also enriched the Society's museum with a new *Manis*, and various other interesting species.

Plates. I annex figures of *Indicator xanthonotus*, *Xiphorhamphus superciliaris*, *Paradoxornis ruficeps* (vide p. 947, ante), and *Cinclidium frontale*.

Note on the Flata limbata, p. 898 et seq., ante.

In a recent communication to Mr. Blyth, Capt. Hutton remarks, of this insect, that—"This year has shewn me that I committed an error in saying that the larvæ come forth in December or January,—as I have now found them in crowds so early as the *middle of November*, and, from their size and the quantity of wax then deposited, they must have been hatched so early as the *beginning of October*. The so-called wax, is apparently a species of manna, and it certainly has much the taste of it. I want to ascertain; therefore, if it might not be useful in medicine."

In p. 898, l. 20, for "image," read *imago*.—E. B.

*Proceedings of the Asiatic Society.**Wednesday Evening, 13th November, 1843.*

The usual Monthly Meeting was held on Wednesday evening, the 13th November.
The Honorable the President in the chair.

The Bust of Mr. James Prinsep, by Chantry, (finished by Mr. Weekes,) having arrived on the *Essex*, was exhibited, and both as a work of art and a most faithful and spirited likeness, it excited the highest admiration.

R. Gantbony, Esq. was balloted for, and declared duly elected.

The following new Members were proposed by the Secretary, and seconded by the Sub-Secretary.

Lieut. Hickey, 1st B. N. I., and Willis Earle, Esq.

Rev. J. Long, was proposed as an Associate Member by the Honorable the President, and seconded by the Secretary.

The following list of Books, presented and purchased, was read:—

Books received for the Meeting of the Asiatic Society, on the 1st November, 1843.

The Calcutta Literary Gleaner, October 1843, vol. ii, No. 8.—Presented by the Editor.

The Monthly Journal of the Agricultural and Horticultural Society of India, vol. i. and vol. ii, to No. 8.—Presented by the Society.

The Oriental Christian Spectator. Bombay. September and October 1843, 2nd series, vol. iv, Nos. 9 and 10.—Presented by the Editor.

Proceedings of the Academy of Natural Sciences of Philadelphia, March and April 1843, vol. i, Nos. 24 and 25.

The Journal of the Royal Geographical Society of London, 1842, vol. xii, pt. ii.

The Annals and Magazine of Natural History. London, August and September 1843, vol. xii, Nos. 75 and 76.

Quarterly Journal of Meteorology and Physical Science, Edited by J. W. G. Gutch. London, April 1843, vol. i, No. 6.—Presented by the Editor.

Proceedings of the London Electrical Society, Session 1842-3, vol. i, pts. vii and viii.—Presented by the Society.

The Edinburgh New Philosophical Journal, by Professor Jameson, April 1843, vol. xxxiv, No. 68.—Presented by the Author.

The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, 3d series. London, 1843, vol. xxii, Nos. 145 and 146.

Transactions of the Geological Society of London, 2d series. London, 1842, vol. vi, pt. ii.—Presented by the Geological Society.

Journal Asiatique, ou Recueil de Mémoires, 4me. series. Paris, Janvier et Février 1843, tome i, Nos. 1 and 2.

Journal des Savans. Paris, Février et Mars, 1843.

Delessert, *Souvenirs d'un Voyage dans L'Inde, exécuté de 1834 à 1839.* Paris, 1843.—Presented by the Author.

Batten's Report on the Settlement of the District of Gurbwal, in the province of Kumaon. Agra, 1843.

Leach's Zoological Miscellany. London, 1814-1817, 8vo. 3 vols.—Purchased.

Gray's List of the Genera of Birds. London, 1841.—Ditto.

Gray's *Spicilegia Zoologica*, pt. i.—Ditto.

Meteorological Register kept at the Surveyor General's Office, Calcutta, for the month of September 1843.—From Government.

The *Grablāghava*, a Treatise on Astronomy, with a Commentary, by Mallārfī. Edited by L. Wilkinson. Calcutta, 1843. (Sanskrit.)—Presented by the Rev. J. J. Moore, Secretary Agra School Book Society.

The *Gunitadhia*, or a Treatise on Astronomy, with a Commentary entitled the *Mitacsbara*, forming the 3d portion of the *Siddhanta Sbiromuni*, by Bhashkara Acharya. Edited by L. Wilkinson. Calcutta, 1842, (Sanskrit.)—Ditto.

The *Goladbia*: a Treatise on Astronomy, with a Commentary, entitled the *Mitacsbara*, forming the fourth and last Chapter of the *Siddhanta Sbiromuni*, by Bhashkara Acharya. Edited by L. Wilkinson. Calcutta, 1842. (Sanskrit.)—Ditto.

Saadi, Auteur des *Premières Poésies Hindoustani*, par M. G. de Tassy. Paris, 1843.—Presented by the Author.

Bibliothèque de M. Le Baron S. de Sacy, 1 liv. Paris, 1842.—Presented by R. Merlin, Esq.

The *Vendidād Sādē*, by the late Frāmjī Aspandiarjī and other Dasturs. (Zend). 1842, 8vo. 2 vols.—Presented by the Bombay Branch Royal Asiatic Society.

Chart of the Comparative Readings of Eight Barometers, 1843.—Presented by Mr. Buist, in charge Bombay Observatory.

A Petition from the Widow of the late Mr. Bouchez, was presented. Referred to the Committee of Papers for report in the first instance.

The following Memorandum by the Secretary was read :—

Memorandum by the Secretary.

I have, with much regret, to report the death of the aged, and highly respected Pundit Kamalakanta Vidhyalauka, the friend and fellow labourer of James Prinsep. With him has expired the accurate knowledge of the ancient Pali and Sanscrit forms of writing ; for although we now possess a key to these ancient characters, no Pundit has exercised himself in the act of decyphering to the extent to which has Kamalakanta. Like all learned persons of his class, he carefully avoided the communication of his peculiar knowledge, and latterly, baving as he thought little chance of being contradicted, the old man became exceedingly dogmatical and opiniative. As I was totally destitute of that critical ingenuity and wonderful acumen which supplied in our lamented friend, James Prinsep, the want of philological accuracy, and as I had not command of the time which he could devote to the careful and patient investigation of the readings of ancient inscriptions, I soon abandoned the attempt to avail myself of Kamalakanta's services in this department. His appointment about the Society was that of Sanscrit Librarian.

He has left two wives, a married and one unmarried daughter, and a son now being educated at the Sanscrit College. His only other relative is a nephew, who has been latterly doing the old man's duties in the Library. He is an intelligent and active person, and is quite competent to conduct the duties of Sanscrit Librarian. I do not know the degree of his proficiency in Sanscrit, but he seems capable of answering all references respecting books made by parties who attend the Library. The librarian's Salary is Rs. 30 a month. I would for efficiency's sake have recommended our securing the services of a young Pundit, named Sarodha Purshâd, who also assisted James Prinsep, and has been of much help to me. He is a man of real ability and learning; but as I can always command his services, (he being employed in my office); as Dr. Roer's proficiency in Sanscrit is now acknowledged; and as the Society owes a debt of gratitude to Kamalakanta, and of respect to him as the collaborator of James Prinsep, I would propose to offer his nephew 20 Rs. a month as Librarian, reserving the other ten for a purpose I shall have in a short time the honour of subjecting to consideration.

I have also to report the demise of Mr. M. Bouchez, our head Taxidermist; regarding this appointment, I shall have the honour of reporting hereafter. I am now with Messrs. Piddington and Blyth engaged in arranging for a proper successor to the duty.

H. TORRENS,

October 11, 1843.

V. P. and Sec. As. Soc.

The appointment of Rasmohun Nayvagish, the nephew of Kamalakanta Pundit, as Native Librarian and Pundit was duly sanctioned.

The following letter from Lady Rodd, accompanying a beautiful Sèvres Porcelain Medallion of Major Rennell, was read :—

To the Secretary of the Asiatic Society, Calcutta.

Lady Rodd presents her compliments to the Secretary of the Asiatic Society of Calcutta, and requests he will do her the favor to present to the Society in her name, the accompanying Medallion of her revered father, the late Major Rennell; her Ladyship had it executed at Sèvres, during her late visit to Paris, by desire of the French Institute, and she feels anxious to send a copy to India, where Major Rennell's fame has ever been duly appreciated.

Wimpole Street, 17th August, 1843.

Read the following Letter to Government, in reference to the Volcanic Island off Cheduba, as ordered at the Meeting of October, with its reply :—

The Secretary to the Government of India, Home Department.

SIR,—By desire of the Hon'ble the President and Members of the Asiatic Society, I have the honor to request that you will be pleased to submit to Government their respectful request, that a scientific person qualified in all respects for the task he deputed at the public expence, and under the superintendence and directions of the Society, to examine and report upon the new Volcanic Island, which has appeared off False Island, near the S. E. end of Cheduba, and on the site of the valuable Copper Ore forwarded to the Society by Capt. D. Williams, from Flat Island, close to the same spot.

2. The reasons which, upon mature consideration, have induced the Society to submit to Government its opinion of the propriety of this measure, are briefly the following:—

I. The extreme interest with which phenomena of this kind are regarded by the learned in Europe, on account of their close connection with many questions both of speculative and even of practical science.

II. Their importance in a maritime point of view, as connected with the appearance and disappearance of shoals in many seas.

III. The occurrence of the phenomenon, so to say, at our own doors; whence it would be hardly creditable to the British name, were not the fullest investigation of it to take place, and be given to the world. It is barely necessary to allude to the high approbation which will on the other hand be accorded to the Government of India, if this is fully, efficiently, and creditably done, so as to satisfy the just expectations of the scientific world in Europe.

IV. Many other scientific, geological, and even national considerations might be adduced here, which the Society doubts not will readily suggest themselves upon mature consideration; but passing over these, it would farther advert to the financial and commercial interest attached to the discovery of a rich ore of Copper in this hitherto unknown locality, when its proximity to the mountains of the Aeng Pass, and other considerations are borne in mind; and (though fully aware that such views and the hopes derived from them are often fallacious,) it is evident that these are neither few nor unimportant.

V. The Society would moreover respectfully submit, that in the establishment of a Museum, (that of Economic Geology,) for the express purpose of aiding in every way the developement of the mineral resources of India, the Honorable the Court of Directors would almost seem to have anticipated that cases like the present would arise, and to have virtually expressed its desire that no such opening for the advancement of general knowledge, or the possible advantage of the state should be left unexplored: and this the more especially, when it occurs so near to the metropolis.

VI. The Society feels that the institution of the Museum of Economic Geology entrusted to their charge, under the immediate Superintendence of an Officer under their orders, but whose salary is at the public charge, entitles the Government to identify itself, when occasion offers, with those who voluntarily seek in these times the general advancement of science, and the benefit of India; and the Society would therefore, from a feeling of duty, abstain from any other course than that of informing the Supreme authority, that an opportunity existed for the practical exercise of means tending to elucidate questions of much interest and importance.

3. Impressed with these considerations, and with many more which the Society will not for brevity's sake, or cannot from its position, intrude upon the attention of Government, it has carefully made such preliminary enquiry as might obviate loss of time should the present recommendation be adopted; and the results of these is, that the services of Mr. Stephen Mornay,* a gentleman who has received a regular scientific, geognostical, and practical Mining education, who holds a diploma from the Royal Mining College of Saxony, with other credentials of the most satisfactory kind, and who is also well known in Calcutta as a person of an enterprising, persevering, and energetic character, are available on a salary of Co's. Rs. 400 per mensem for whole months, or 150 Co's. Rs. per week for broken periods, and 3 Rs. per diem for his tra-

velling expences when not furnished with a conveyance by Government, by which also all contingent charges, such as the costs of surveying, those of examining mineral sites, or such as might perhaps prove to be such, collecting and conveying specimens, &c. &c. are to be defrayed. The Society would also solicit permission for an indent on the Magazine and Surveyor General's Office, for tools and scientific instruments, &c. under its inspection, and responsibility for their safe custody and due return. Mr. Mornay's time to be at the disposal of Government under the Society's directions, for any period long or short, as may be found necessary.

It presumes that this will not be thought more than a fair remuneration for the services of a gentleman of scientific attainments on a duty which must involve much personal labour and some discomfort, and which demands acquirements not commonly to be met with in India.

4. In conclusion, the Society would earnestly and respectfully urge upon the attention of Government, that opportunities combining as this does the augmentation of general knowledge and the chances of immediate benefit, and both in the same locality, but rarely indeed occur; and it is thus the more anxious that this investigation which it trusts cannot fail to redound to the credit of its promoters, should not be neglected.

H. TORRENS,

11th October, 1843.

Vice President and Secretary Asiatic Society.

No. 298.

From T. R. DAVIDSON, Esq. Officiating Secretary to the Government of India, to H. TORRENS, Esq. Vice President and Secretary to the Asiatic Society, dated the 21st October, 1843.

Home Department.

SIR,—I am directed to acknowledge the receipt of your letter, dated the 11th instant, written by desire of the President and Members of the Asiatic Society, requesting that a scientific person may be sent at the public expense to examine a Volcanic Island, which is stated to have appeared off False Island near the S. E. end of Cheduba, and explaining the reasons which have induced the Society to make this request.

2nd. The Governor General in Council considers, that there should be a Nautical Survey in the first instance of this Island; its locality and extent should be accurately ascertained, before its internal formation and character are scientifically examined.

3rd. His Lordship in Council will request the Hon'ble the Deputy Governor of Bengal to authorize an arrangement by which a Nautical Survey may be effected, and when that object has been attained, and the result reported, the adoption of further measures, with a view to the promotion of Science, will be taken into consideration.

I have the honor to be, Sir,

Your obedient servant,

Council Chamber, the 21st October, 1843.

T. R. DAVIDSON,

Offg. Secy. to the Govt. of India.

And the following from Captain Williams was also read:—

No. 1898.

Letter of Assistant Commissioner Capt. D. Williams, of 9th August 1843, with report of the native Soogree, (officer,) accompanying it.

MY DEAR SIR,—The Soogree of Flat Island has at last been able to come to the Sudder station. He reports to me the sudden disappearance of the Island thrown up by a volcano, a few days after its appearance. It was impossible to go to it to obtain any of its formation. This is much to be regretted, as I see by your letter of the 7th instant, just received, that you attach importance to the subject of the volcano.

I am encouraged by your letter to submit specimens of cloth manufactured at this place; it so resembles the Scotch "Shepherd's Plaid," that I have had pantaloons made of it for wear. I should think it better adapted than the plaid, being not so warm for this country, yet warmer than jean or drill.

Dr. Andrews has sent specimens of this cloth for the inspection of Messrs. Ranken and Co. the tailors. It is made of double thread, and would be of a finer texture and stronger, if we had fresh English thread to make it with.

I also enclose for inspection a petrification of the Bela flower, (country Jessamine, or "Jasmimum Sambac,") that the natives find here, though very seldom. The petrification occurs on the shrub. I had a much finer specimen that was stolen from me a few days ago; the natives set them in gold rings; this is evidently the bud of the flower, and is petrified when in the calix.

Yours faithfully,

Ramree, Arracan, 25th September, 1843.

D. WILLIAMS.

P. S.—I forwarded to you by Lieut. Phayre, who has left us for Calcutta, the lumps of iron that were found with the gold coins on Chedooaba.

It was resolved, that as the Survey by the Ganges Steamer would not afford time for the researches contemplated by the Society, the Curator of the Geological and Mineralogical Department be requested to draw up such instructions, as may enable Captain Russell and his officers to collect usefully what information they can in the progress of their duties.

The Secretary presented specimens of the Type for the Tarik-i-Nadiree, of which work he stated he had so far advanced the labour of collation, that the printing of it might now commence.

Read the following Letter from Secretary to the Government of India:—

No. 40, of 1843.

From J. THOMASON, Esq. Secretary to the Government of India, to the Secretary to the Asiatic Society, dated Fort William, the 30th September, 1843.

Foreign Dept. Secret.

SIR,—At the desire of the Governor General in Council, I have the honor to transmit to you for the use of the Asiatic Society, and for such notice in the Journal of its proceedings as may be considered necessary, the accompanying copy of Notes of a Tour taken through parts of Beloochistan in 1838-39, by Hajee Abdool Nabee, translated and arranged by Major Robert Leech, C. B. Bombay Engineers.

I have the honor to be, Sir,

Your most obedient servant,

Fort William, the 30th Sept. 1843.

J. THOMASON,

Secy. to the Govt. of India.

Also the following from the Secretary to the Government of Bengal:—

No. 2291.

From Under Secretary to the Government of Bengal, to the Secretary to the Asiatic Society, dated Fort William, 2nd October, 1843.

Marine.

SIR,—I am directed to transmit to you copies of the Meteorological Registers kept at Penang, for the months of April, May, June and July last. I am, Sir,

Your most obedient servant,

CECIL BEADON,

Under Secy. to the Govt. of Bengal.

The following Letter from Captain Jacob, Bombay Army, was read:—

MY DEAR SIR,—I perceive by a letter from Mr. Piddington to the Bombay Asiatic Society, published in its last No., that your Museum of Economic Geology is desirous of information as to ores, mines, &c. on our side of India; I enclose therefore a report on the iron of the Guzerat Peninsula, published I believe by the Committee of the London Society, which devotes itself to inquiry into and improvement of our Indian resources, to whom it was sent from Bombay, but what became of the specimens that accompanied it, given to our Bombay Geological Society, I know not; if these are desiderates, I can easily supply a fresh collection on my return.

From my long silence, I fear you will have thought me very ungrateful for your Journal duly received. Last month I sent you a budget on the Girnar Inscriptions, which I trust has reached; intense official occupation, (in Kattywar we have two men to look after twenty-two thousand square miles,) and severe illness, have stood in the way of my usefulness; the first cause has ceased, but the other remains.

Yours, my dear Sir, very truly,

Ootacamund, 11th November, 1843.

E. JACOBS.

Read the following from Captain Hannington, Purulia, addressed to the Sub-Secretary.

MY DEAR SIR,—I am extremely obliged to you for the trouble you have taken about the Mortality Table, and also for the perusal of Major Henderson's valuable Paper, which I return by this day's post.

If you can procure, and will publish, Mr. Prinsep's Table, the purpose for which I wanted it will be fully served.

I send you a Memorandum, which I have drawn up respecting Mortality among the Military. There are a few Tables to which I have prefixed a few explanatory remarks. I have abstained from any *practical* deductions, as they would hardly fall in with the scientific nature of your Journal, in which perhaps you may think fit to publish them. Should the Paper as it is, be thought unsuitable, you may reject it without ceremony.

I am, my dear Sir,

Purulia, October 5, 1843.

Yours very truly,

J. HANNINGTON.

Captain Hannington's very valuable Tables will be printed in the Journal, and in an early number.

Read the following Letter from our new and zealous associate Dr. Sprenger :—

To the Secretary of the Asiatic Society of Bengal.

DEAR SIR,—The Asiatic Society is in possession of two copies of Abdur-Razzak's Dictionary of Suffitic terms, which being rather scarce, and the completest work of the kind, might deserve to be published; and if the Society should deem it worthy of being edited, I should with great pleasure undertake the task. I am fully aware of the objections which can be raised against the work. Sufism is not much studied, neither here nor in any other part of India, and the merit of the work is perhaps not so great as it might be expected. With reference to the first objection we may answer, that it is a duty for us, as we are nearer the source, to furnish European scholars who have done so much for India, with materials; and Tholuck's work *De Sufismo*; Garcin de Tassy's most elegant book, entitled *Les Oiseaux et les Heures*, "Gehmölder's" *Specimen de Philosophia Arabum*, Rosenzweig's magnificent edition of part of "Jelâled-din Rum," and Ruckert's highly poetical version of other portions of the *Mesnewi*, are not only proofs that Sufism is studied in Europe, but that they find very great difficulties in explaining technical expressions, most of which they might find without loss of time in Abdur-Razzak's Dictionary. As to the merit of the work, I may repeat what I have already stated: a Dictionary of Suffitic terms is very desirable, and this is the best book known on the subject, it is therefore the more desirable that it should be edited, as no European collection of MSS. is, to my knowledge, in possession of a similar work.

The work itself is very small, and would hardly fill one hundred pages, if the Arabic text alone was printed, which I should think best to do. The expense would therefore be very trifling.

I am, dear Sir,

Your's most respectfully,

A. SPRENGER.

The work upon this recommendation was ordered to be printed forthwith under Dr. Sprenger's kind superintendence, and the best thanks of the Society were accorded to him for his suggestion.

Calcutta, 1st November, 1843.

Read a letter from Mr. J. T. D. Cameron, accompanying the Model to which it refers.

To H. TORRENS, ESQ. Secretary to the Asiatic Society, Calcutta.

SIR,—I have the honor to forward per bearer, a specimen of the Ferry Boats commonly used in Ceylon.

The European residents of the Island call them Out-riggers, from the outer work attached to the boat, which is intended to balance it. The craft used by the native fishermen are much larger, but similarly built.

Should you think the specimen deserving of a place in the Museum of this city, I beg to say it is entirely at your service.

I am, Sir, yours obediently,

La Martiniere, 24th October, 1843.

J. T. D. CAMERON.

From the Rev. J. J. Moore, Secretary Agra School-Book Society.

No. 114.

To the Secretary of the Asiatic Society, Calcutta.

SIR,—I beg to present, for the acceptance of the Society, copies of two celebrated Sanscrit works on Astronomy, published under the patronage of the Agra School Book

Society; and since the death of the late Resident of Sehore, completed under my supervision.

I have the honor to be, Sir,

Your most obedient servant,

Agra, 12th October, 1843.

J. J. MOORE,

Secy. Agra School Book Society.

The type and general execution of these Books were considered as most creditable to the Agra School-Book Society's Press and to the Editors.

Read the following letters from the Bombay Branch Asiatic Society:—

To the Secretary of the Asiatic Society of Bengal, Calcutta.

SIR,—Under the instructions of the Bombay Branch of the Royal Asiatic Society, I have transmitted for the Library of the Asiatic Society of Bengal, by Capt. Noakes of the Ship *Samuel Boddington*, a lithographed copy, in 2 vols. of the Vendidad, in the Zend language, but Gujarathi character, with a Gujarathi translation, paraphrase, and comment, by Aspandiarjī Framjī and other learned Dastūrs of the Kadmf sect of Parsees. Of this work the Society has had 25 copies lithographed at an expense of upwards of Rupees 1,000, with the object of preserving a work now become rare in manuscript, and of distributing it amongst the principal libraries of Europe and Asia. I shall be happy to receive an acknowledgment of the receipt of the work. The Society have also directed the Jzashné and Visparád, which compose the doctrinal standards of the Parsī faith, and the larger liturgy in use among the Zoroastrians, to be printed, which will be forwarded as soon as ready.

The MSS. from which these works are copied, are in possession of the Rev. Dr. John Wilson, late President and present Honorary President of the Society.

I have honor to be, Sir,

Your most obedient servant,

Bombay Asiatic Society's Rooms, 7th Sept. 1843.

JOHN G. MALCOLMSON,

Secretary B. B. R. A. S.

To H. TORRENS, Esq. Secretary to the Asiatic Society of Bengal.

SIR,—I am directed by the Bombay Branch Royal Asiatic Society, to request that you will have the goodness to order the following works to be sent to Messrs. Thacker and Co., for transmission to the Library of our Bombay Society, along with some works ordered from them. I have requested Messrs. Thacker and Co. to pay yourself, or the Treasurer of the Asiatic Society, the price of these works, as advertised on the cover of the Journal of your Society.

The Mahabarata in Sanscrit, 4 vols. (large paper.)

Harriwansa, (royal 4to.)

Raja Tarangini, (large paper.)

Naishadha, (4to.)

Raghavansa.

I have the honor to be, Sir,

Your most obedient servant,

Bombay Asiatic Society's Rooms,

JOHN G. MALCOLMSON,

6th September, 1843.

Bombay B. B. R. A. S.

The present of the rare work alluded in the first letter was duly appreciated by the Members, and in reference to the order contained in the last letter, the Secretary stated, that he had taken upon himself, pending the approbation of the Society, to present to the B. B. A. S. the works desired by them, which was fully approved of.

Read the following Letter from Moulmein :—

H. TORRENS, Esq. *Secretary to the Asiatic Society.*

SIR,—I am desired by the Committee to apprise you of the formation of an Horticultural and Agricultural Society at this station, connected with which will be a Museum of the Natural History of these provinces, so soon as the funds of the Society will admit of the erection of a building for the reception of specimens; in the meantime, they are anxious, as a commencement, to open a correspondence with your Society, and trust it will be reciprocated. I have the honor to be, Sir,

Yours very obediently,

Moulmain, 12th October, 1843.

G. R. GORDON,

Hony. Secy.

The Secretary was requested to state that the Society would have much pleasure in forwarding the views of that at Moulmein in every possible way.

Read Letter from the Hon'ble Company's Astronomer at Madras.

From T. G. TAYLOR, Esq. F. R. S. and F. R. A. S. *Hon'ble Company's Astronomer,*
to H. TORRENS, Esq. *Secretary to the Asiatic Society.*

SIR,—With reference to an application lately made by your Society to the Governor General of India to be supplied with the Meteorological Observations made at the Madras Observatory, at the Tidal Stations, and at the Magnetic Observatories, I am desired by the Most Noble the Governor in Council at this Presidency, to place myself in communication with you upon this subject, and to furnish the Asiatic Society with whatever observations you may desire; to this end I have the honor to state,

1st. That the Meteorological Observations made at the Madras Observatory, from their commencement in 1795 up to the end of 1822, are printed in a work entitled "Madras Observatory Papers," copy of which it appears has been furnished to the Asiatic Society.

2d. The Meteorological Observations made at this Observatory since 1822, and up to the end of the present year, are now in the course of publication, and a copy will be forwarded to the Asiatic Society on its completion.

3d. The Meteorological Observations at the Magnetic Observatories being made at odd hours and minutes of Göttingen mean time, and bearing reference to certain corrections which may be necessary to the Magnetic Observations, rather than to any Meteorological enquiry, are not as a *whole* of that strict character, to entitle them to the name of a Meteorological Register; selections from these, however, with certain explanations and corrections, will eventually be published.

4th. With regard to the Meteorological Observations made at the Tidal Stations, it is proposed that their publication shall be undertaken as soon as two complete years' Observations at each station has been obtained, when the Observations will altogether be discontinued.

5th. Since the whole of the Meteorological Observations asked for by your Society will in all probability be in print in the course of a twelve month, I have delayed for the present forwarding any manuscript copy; in case however any more immediate information should be desired, I shall be prepared without delay to forward your wishes.

I have the honor to be, Sir,

Your most obedient servant,

Madras Observatory, 26th September, 1843.

T. G. TAYLOR,

Hon'ble Company's Astronomer.

Read Letter from Colonel Spiers, Resident at Gwalior, &c. &c.

To H. PIDDINGTON, Esq. *Sub-Secretary to the Asiatic Society, Calcutta.*

DEAR SIR,—When on furlough, I picked up a few geological specimens of various kinds, chiefly limestone from Stirlingshire, Scotland, a few specimens of copper ore from Ireland, and lead from Lanarkshire, with some of various kinds, probably not marked, at least not to be trusted; in all perhaps 50 specimens. If you think they would be of any use in the Museum of Geology, I shall be happy to send them down by some boat. I happen also to have 5 or 6 coins, one of Sigismund III, one James VI, one Clot 1602, 1 ditto 1582, one Hamburgh, and one ditto James 1570. If you think these would be valued, I will be happy to send them also.

Your obedient servant,

Cawnpore, 23d September, 1843.

A. SPIERS.

Read the following Letter to the Secretary from Captain Eastwick :—

To the Secretary of the Asiatic Society of Bengal, Calcutta.

MY DEAR SIR,—I received a day or two ago, your kind note regarding the publication of my Sindo Vocabulary, and am much gratified by the flattering manner in which my endeavours have been mentioned. I returned to England in June, on sick certificate. With respect to the 25 copies of the Vocabulary reserved for me, I should be highly obliged, if you would order them to be transmitted to Messrs. Forbes and Co. of Bombay, who are my Agents in India, and who will take care of them for me.

I am, dear Sir,

Yours truly,

Frankfort sur Maine, August 17, 1843.

E. B. EASTWICK.

The Secretary stated, that Captain Eastwick's copies had been sent to Bombay through the Government, but that Messrs. Forbes would be written to, in order that they might claim the packet if not already delivered to them.

Read the following Note from Dewan Ramcomul Sen, who had kindly undertaken to examine the Sanscrit paper on Eclipses, presented at a former meeting of by the Rev. J. Pratt :—

The bad state of my health has hitherto prevented my writing to you about the accompanying paper, which I have now the pleasure to return. It is styled "Grahuno Mala," or Garland of Eclipses, and has been prepared I believe by some Astronomer of Nepaul. It professes to give an account of Sun and Moon Eclipses for six years; viz. from the year 1759 to 1766 of the Sak era. It does not, however, shew any calculation or data by which the problems are solved. Following is a Table of the Eclipses :—

Sak, 1759, (or Sumbul 1894,)—	1	Moon Eclipse.
1760,	1	Ditto ditto.
1761,	1	Ditto ditto.
1761,	1	Ditto ditto.
1763,	1	Sun ditto.
1763,	1	Moon ditto.
1764,	1	Sun ditto.
1765,	1	Ditto ditto.
1765,	1	Moon ditto.
1766,	1	Ditto ditto.
1766,	1	Ditto ditto.

Year, month, age of the Moon, the day of the week, the hour it began, the position occupied, and its duration, are stated.

29th October, 1843.

The paper was not considered as worth printing, as being for so very short a period, and the number of cuts considerable.

Read the following Letter from Major Hough, accompanying the Life Preserver to which it refers :—

To H. TORRENS, Esq. *Secretary to the Asiatic Society of Bengal.*

SIR,—I do myself the honor to transmit, for submission to the Asiatic Society of Bengal, a “Cloth Life Preserver,” which is so portable and cheap, as to render it very useful to all individuals, whether on board of Ship, or on board of Boats in any river.

I have the honor to be, Sir,

Your obedient servant,

Calcutta, 24th Oct. 1843.

W. HOUGH, Major.

P. S.—A description of the “Life Preserver” is annexed to this letter :—

Description of the “Cloth Life Preserver.”

It is made like a Jacket without sleeves, composed of two pieces of cloth sewn together, so as to form the front and back. There being two cloths to each, the space between the two is easily inflated by means of the wooden tube placed in the front, by blowing into it. It can only be inflated when the cloth is wet. The tapes, above and below, which pass through the loops, are meant to fasten the Life Preserver round the neck and waist. When inflated, it will float any man—for, in proportion to the bulk of a man’s body, must the size of the Life Preserver be increased. It is in use in the British Army at Home, and its cost is about one shilling. A cork, or piece of wood, and a piece of string, or tape, should be attached to the tube, as a stopper ; to prevent the egress of air, or of the ingress of water.

The Americans have rendered all kinds of furniture “Life Preservers” on board of Steamers ; but, I do not find any so personally useful as that I submit, since the user can swim with it to land, &c. It is also available to travellers generally, having to cross rivers, &c., being portable. It is superior to the “Chinese Bamboo Life Preserver,” and is better and cheaper than the “Air-tight Hats and Caps,” which cost 16 to 14 Rs. and are too costly for the Private Soldier, or those in the lower ranks of the people. It can be renewed, at pleasure, while there may be difficulty in procuring an adequate supply of Hats and Caps ; and even Bamboos may not always be procurable. The “Cloth Life Preserver” is admirably adapted for “Regimental Swimming Parades ;” and may, annually, save the lives of many men, women, and children, both European and Native.

Read the following Letter accompanying the valuable paper to which it refers :—

H. TORRENS, Esq. *Secretary to the Asiatic Society.*

MY DEAR SIR,—I have the pleasure to send you a sketch of Aracanese History. You will be able to judge whether it is of sufficient interest to lay before the Society, a point which from my Aracan bias I feel uncertain about.

Yours very truly,
A. P. PHAYRE.

This most interesting communication was handed to the Editors, for early insertion in the Journal.

The Secretary also presented on the part of the Rev. J. Long, who was present, a valuable Essay, entitled "Tables of Comparative Philology, shewing specimens of the affinity of the Greek, Latin, and English with the Sanskrit, Persian, Russian, Gaelic, Welsh, Lithuanian, German, Hebrew, and Anglo-Saxon," which, as it was desirable to secure the Author's supervision, was also ordered for early publication, the subject being one of intense interest to Indian and general Philologists, and one that requires a rare combination of learning, talent, and industry, to undertake.

Read the following Letter from G. Buist, Esq. The Barometrical Chart to which it refers, was exhibited, and much admired :—

MY DEAR SIR,—A thousand thanks for your attention in forwarding me the Barometer Returns for the May Storm. I do not know that I shall have any more occasion to trouble you on this subject for the present, but should I require to do so, I shall avail myself of your kind offer of services.

I have this day shipped on board the *Samuel Boddington*, three copies of a Diagram illustrative of the readings of nine Barometers, being up together for 24 hours, and read half hourly. One of these is for the Asiatic Society, the others for yourself, or any one else who may care about them. The Society's is the only one which is coloured, and put on a roller: the most simple operation of this sort is so expensively, so tardily, and so badly done at Bombay, that I have left them plain; so that should you think it worth while, they may be filled up to your fancy at Calcutta.

I am anxious to see your Memoir:—it is published I observe, but has not yet reached Bombay,

I forgot to mention, that a short Memoir, referring to the Barometric experiment, appears in the next number of the Bombay Asiatic Transactions, of which I shall send you a copy, so soon as it is printed.

Yours truly,

Bombay, September 6th, 1843.

GEORGE BUIST.

P. S.—In case the Maps should not be sent to you, perhaps you will take the trouble of sending for them to the office of Messrs. Gisborne and Co. on the *Samuel Boddington's* arrival.

Report of the Curator Museum Economic Geology for the month of October.

Museum Economic Geology.—We have to acknowledge in this month from the Bombay Branch Royal Asiatic Society, a box of Geological and Mineralogical Specimens, 35 in number, all of much interest and utility, and for the most part so far new to our Collections, that we only possessed small specimens of some of them. Another box has been announced by the Society. As the Catalogue is brief, it may be inserted here with the letter.

To the Secretary of the Asiatic Society of Bengal.

SIR,—With reference to my letter of the 5th ultimo, I have now the pleasure to enclose a list of the Geological and Mineralogical specimens forwarded for the Museum by the *Fazal Rubany*. These specimens are necessarily miscellaneous, as

they consist of duplicates put aside for your Society, in the course of the new arrangement, now in progress, of our Collection. Still some of them will, I think, be of interest, if not in the higher and scientific department of your Collection, at least in that of Economic Geology. The specimens of the Bombay Basalt, I request may be presented in my own name, and if more specimens of the Minerals they contain are required, I shall endeavour to procure them.

Another case will be dispatched in a few weeks. I have the honor to be, Sir,

Your most obedient servant,

Bombay Asiatic Society Rooms,
22nd Sept. 1843.

JOHN G. MALCOLMSON,
Secretary B. B. R. A. S.

List of Specimens forwarded.

- No. 1 to 6. Specimens of iron ore from Malwan, in the Collectorate of Rutnagherry. See Journal of the Bombay Branch Royal Asiatic Society, No. III, and Geological Transactions, Vol. V, page 548. The rock in which this fine ore is found, is stated to be sandstone, I think by mistake.
- 7 „ 9. Building stone from the ruins of Mandoo, the Ancient capital of Malwa. The fine reddish sandstone abounds with minute corals, and I have also found in it marine shells. Many of the finest buildings are composed of this.
- „ 10. Selenite. Persian Gulf?
- „ 11. Lithographic limestone (so called); southern Mahratta country. See Capt. Jervis' and Capt. Newbold's Papers in Journal of Asiatic Society of Bengal, Dr. T. Christie, in Edinburgh Journal of Science, and Geological Transactions, Vol. V, plate 46.
- „ 12. Argillaceous limestone. South Mahratta country.
- „ 13. Common ditto, (Kullajee,) ditto.
- „ 14. Calc spar in argillaceous limestone, ditto.
- „ 15. Limestone, ditto,
- 16 „ 17. Diamond sandstone, near Belgaum, ditto. It is not known that diamonds are found in this rock. It is so called from its relations and mineralogical characters being that of the diamond matrix.
- „ 18. Diamond sandstone. Kowlgere, Dharwar S. M. country,
- „ 19. Laterite, ditto.
- 20 „ 21. Gypsum from Persian Gulf. This was imported in some quantity intended to be used as stucco.
- 22 „ 25. Rock of which the Maldivé Islands are formed, collected by Capt. Moresby, I. N. See Darwin on Coral Reefs. The complete collection in the Bombay Museum is perhaps unequalled.
- „ 26. Iron stone from Segoor, 15 miles north of Dharwar, South Mahratta country.
- „ 27. Iron ore used at the native foundries, Mahableschwur hills.
- „ 28. Painted plaster of the baths of Aurungzeebe's palace, Aurungabad, by J. G. Malcolmson, Esq.
- 29 „ 30. Granite from bed of Nerbudda near Mhysur. See Major Stirling's letter, Bombay Geographical Society's Journal. This granite rises in the middle of the basalt, and is cut by basaltic dykes.

- No. to 31. Basalt, Mazagon Quarry, Bombay. Occurs in columns and balls. Is extensively used in the erection of the ship-building slips and wharfs in Bombay and Colabah. This specimen contains Laumonite and Prehnite. Presented by J. G. Malcolmson, Esq.
- „ 32. Ditto ditto, with Laumonite and Calcspar.
- 33 „ 34. Ditto ditto, with Apophyllite.
- „ 35. Basalt, from the hot springs of Rajapoor, Southern Concan. This specimen was coated with coating resembling Pyrites, probably from Hydro-Sulphureous water on the iron of the basalt.

JOHN G. MALCOLMSON,
Secretary, B. B. R. A. S.

Mr. Pyle of Futtegurh, to whom I addressed one of our circulars, sends us a box of specimens of a peculiarly interesting kind, being mostly the products of his own manufacture from materials near that station.

No. 76.

H. PIDDINGTON, Esq. *Calcutta.*

SIR,—I beg to apologize for not having answered your letter earlier. I have now the pleasure of sending the following products of Upper India by the hands of Mr. E. Fricker, who has engaged to deliver them over to you.

Pottery.—No. 1. A specimen of Earth, for making superior ware when mixed with

No. 2. Of which a specimen is also sent.

No. 3. Stone-ware Bottles made at Futtegurh, of the above Earth.

Crucibles.—The Earth marked No. 1, when properly manipulated is capable of forming Crucibles, which will withstand the most intense heat of a bellows furnace.

Fire Bricks.—No. 4. Fire Bricks made at Futtegurh.

No. 5. Soda Sub Carb. made at Futtegurh.

No. 6. The Earth from which the Soda is made.

No. 7. Dark green Glass from riversand and the above Soda, with certain additions.

No. 8. Light green Glass made from the above Soda, with certain additions.

No. 9. Citrate of Lime for the manufacture of Citric Acid.

Your obedient servant,

Futtegurh, 14th September, 1843.

JOHN E. PYLE.

Our indefatigable correspondent, Captain Shortrede, sends us a specimen of a supposed Lithographic Stone, of which his account is as follows:—

To H. PIDDINGTON, Esq. *Curator Museum Economic Geology, Calcutta.*

SIR,—I have the honor to inform you, that I have despatched to your address for the Museum of Economic Geology, by the Steamer *Luckia*, a package containing a slab of Stone from the neighbourhood of Rewa, which I apprehend may be found useful for Lithographic purposes.

I have sent two pieces; the smaller of which may serve as a hand specimen, and the larger for Lithographic experiment.

There are some quartz veins which probably may render this particular slab of no great value, but if the stone be otherwise fit for Lithography, it seems desirable to bring it to notice.

The locality from which this stone was brought is a hill at the small village Boorhwa, two miles S. E. from Raipoor, about twelve miles from Rewa on the road towards Mirzapoor.

On the top of the hill are the ruins of a temple of Devi, and a large pile of undressed stones, which seem as if they had been intended for the foundation of a flight of steps. They are laid without mortar, and the work has never been completed. The present slab was found lying loose at the bottom. The whole pile is of the same sort of stone, but a few slabs of sandstone have been used in building the temple. I did not ascertain the particular spot from which the pile has been quarried, but I believe it to be in the immediate neighbourhood, if not on the hill itself. This might easily enough be ascertained, should it appear that the enquiry would be worth the labor.

Some of these stones may be used as whetstones, and though not very good ones, they seem quite as good as many that are supplied from the public stores.

I have the honor to be, Sir,

Your most obedient servant,

Allahabad, 10th October, 1843.

ROBERT SHORTREDE, *Capt. 1st Asst. G. T. S.*

Of these two stones, I regret to say, that the larger appears quite unfit for Lithography, being nothing more than a common fine grained (coarse grained for lithographic purposes) sandstone. The small slab was sent to Messrs. Black, as it promised better, and their answer is as follows:—

H. PIDDINGTON, Esq.

SIR,—I have pleasure in sending a few impressions, and the stone you sent me the other day; I have not troubled Mr. Bennett. The stone I find is rather too soft, and I fear will not give very clear impressions; but if a somewhat larger piece could be obtained, I would try how many fair proofs could possibly be taken from it.

Your obedient servant,

Asiatic Lithographic Press, 31st Oct. 1843.

T. BLACK.

Mr. Thomas Hugon, of the Salt Department, has presented a very beautiful lithographed section of the Boring of the Artesian Well of Grenelle near Paris, 1680 French feet deep, and I may mention here, that we fortunately possess a series of the Fort Borings to the depth of 172 feet.

Geological and Mineralogical Department.—Mr. Dodd, Assistant Assay Master, has obliged us with a few well chosen Geological specimens from the neighbourhood of Agra, of much interest in themselves, and of special utility to us in filling in our Cabinets of Comparative series.

From M. Gros of Bourbon, we have received a few specimens of Lavas, and Lava with Leucite, from the Volcano of that Island, which will be a valuable addition to our Volcanic series.

For all the foregoing Communications, the thanks of the Society were duly ordered.

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